

# **PrintFleet Optimizer**

Version 3.4.8

User Guide



## **PRINTFLEET®**

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PrintFleet Optimizer User Guide.

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# Chapter 1 Introduction

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Welcome to PrintFleet Optimizer—a complete remote print management system designed to help owners, sales representatives, service technicians, and administrative personnel grow and streamline their business.

This guide covers all aspects of using PrintFleet Optimizer and administering the PrintFleet Optimizer system, including:

- Device Views
- Reports
- Alerts
- Settings
- Administering PrintFleet Optimizer

For information on using the Printer DCA, see the *PrintFleet Printer DCA User Guide*.

This chapter discusses:

- Device support
- Introduction to the PrintFleet Optimizer interface
- Obtaining software updates
- Contacting Technical Support

## 1.1 Device support

PrintFleet strives to develop vendor-neutral software products, and to support as many models of printers, copiers, fax machines, and multifunction peripherals as possible. However, our products do not support all models available in the market. PrintFleet is continuously adding model support into our software products.

Supported models are not all supported to the same extent. For example, one model may be supported for all available data types, while another may only be supported for specific data types, such as device description and life page count.

PrintFleet software products collect information from networked imaging devices. Stand alone devices are not supported. Locally



connected devices can be partially supported by using the PrintFleet Local Print Agent add-on application.

If you find a model that is not currently supported, contact your PrintFleet distributor to inquire about possible future support. If you are a direct client you can contact PrintFleet Technical Support.

Table 1 lists the data types that the Printer DCA attempts to collect from networked imaging devices during a network scan.

**Table 1: Types of data collected by the Printer DCA**

IP address	toner cartridge serial number
device description	maintenance kit levels
serial number	non-toner supply levels
meter reads (multiple)	asset number
monochrome or color identification	location
LCD reading	MAC address
device status	manufacturer
error codes	firmware
toner levels	miscellaneous (machine specific)

The Local Print Agent collects the following data types:

- Device driver name
- Device manufacturer
- Communications port

<b>Note</b>	Additional data collection (such as counts, toner level, and supplies) from local devices depends on the data the device itself supports.
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## 1.2 Introduction to the PrintFleet Optimizer interface

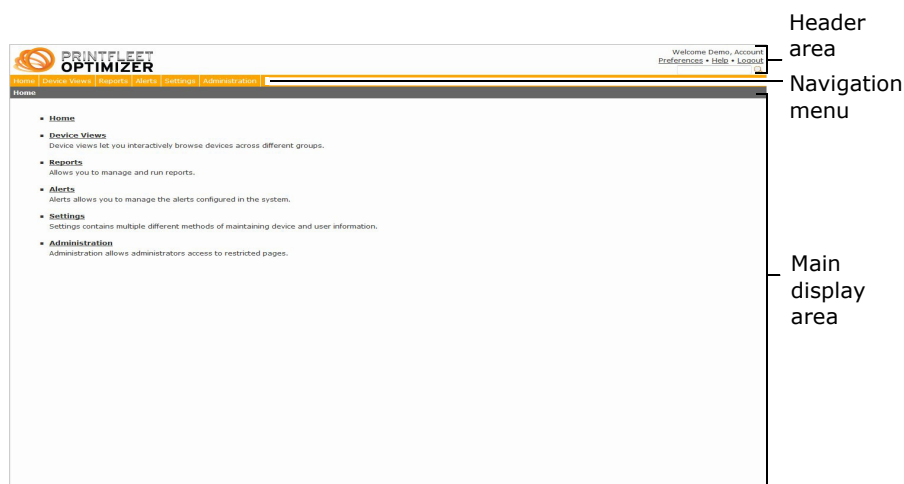
The PrintFleet Optimizer web interface is the primary means by which users view collected imaging device data, configure reports, and manage the system.

The PrintFleet Optimizer interface makes it easy to access the information you need from anywhere with an Internet connection.

The PrintFleet Optimizer interface has three main components:

- The header area
- The navigation area
- The main display area

The specific items displayed in each area, as well as what is displayed on the home page, will depend on the specifications of the user account.



PrintFleet Optimizer Interface

For more information on user accounts, “Managing users” on page 121.

## Logging in to the system

Each user is assigned a unique user name (typically an email address) and password to log in to the PrintFleet Optimizer web console. See “Managing users” on page 121.

### To log in to PrintFleet Optimizer:

1. In your browser window, navigate to your designated PrintFleet Optimizer URL, for example, <https://secure.printfleet.com>.
2. Enter your user name and password in the designated boxes, and then click **Login**.

If you have forgotten your password, you can request a password reset if your user name is an email address.

### To request a password reset if you forgot your password:

1. Enter your user name (must be an email address for this to work) in the designated box on the login page.
2. Enter one or more characters in the password box.
3. Click **Login**.
4. Click **Forgot Password** (this will appear after a failed login attempt).

5. Click **OK** in the dialog box that states Are you sure you wish to reset your password?
6. Check the inbox of the email address used to login.

**Note**

While we strive to support all popular browsers, we recommend that you use the latest version.


If you are using Internet Explorer 8 or 9, upgrading to Internet Explorer 10 or another browser such as Chrome, FireFox or Safari will result in a significantly improved user experience, due to improved speed and standards compliance.

The first time you log in to PrintFleet Optimizer, you will see the End User License Agreement. After this is accepted once, it will not be shown again.

## Using the search function

The search function in PrintFleet Optimizer allows you to quickly find specific items in the system.

### To search for a specific item in PrintFleet Optimizer:

1. Type your search string in the text box on the right side of the header area of the PrintFleet Optimizer interface.
2. Press **Enter**, or click .

Results are displayed and separated into users, devices, and groups.

User results display the login name, first name, last name, last login date and time, the groups and roles assigned to the user, and links to edit, copy, or delete the user from the user edit page (if applicable to the current user). See "Managing users" on page 121.

Device results display the device name, management status, license status, group, serial number, IP address, MAC address, asset number, location, last active date and time, and a link to edit the device (if applicable to the current user). See "Managing devices" on page 97.

Group results display the group name, parent groups, and a link to the group edit page (if applicable to the current user). See "Managing groups" on page 92.

## 1.3 Obtaining software updates

New software releases are available on a periodic basis.

For information on updating the Printer DCA software, see the *PrintFleet Printer DCA User Guide*.

To obtain updates for PrintFleet Optimizer components other than the Printer DCA, contact PrintFleet Technical Support.

## **1.4    Contacting Technical Support**

For technical support, contact your PrintFleet distributor.

## Chapter 2    **Device Views**

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Device views let you interactively browse devices across different groups.

### 2.1    **Working with device views**

There are several default device views in PrintFleet Optimizer. You can also create unlimited custom device views that contain the precise information you want to see.

**To view data using an available device view:**

- On the **Device Views** menu, select the device view you want to use.

For most views (Maps being the exception), a collapsible group hierarchy is displayed on the left side of the page. Select the group that contains the devices you want to view.

<b>Note</b>	Depending on the number of devices in a selected group, it may take a few moments for the requested information to be processed and displayed. If necessary, you can press the ESCAPE key to cancel the request, and then click somewhere else to proceed with a different action.
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In some views you can filter the data if you want. Filtering allows you to view a subset of the devices in the selected group. You can filter devices by any of the following:

- Management Status
- Network/Local
- Last Active
- Supply Level
- Last Supply Request
- Text

If you want, you can also sort the data in a view.

#### **Sorting data**

Data in a device view can be sorted. Sorting allows you to view information in ascending or descending order.

### To sort data in a device view:

- Click the column title you want to sort the data by, and click again to toggle between ascending and descending order.

#### Note


An arrow icon is displayed in the header of the column being sorted. The direction of the arrow indicates whether the column is currently being sorted in ascending or descending order.

You can customize a default sort order for each view when creating or editing a view. See "Creating custom device views" on page 21.

## Filtering data by management status

If you want, you can filter devices by their management status.

### To filter data by management status:

- While on a device view, click the filter button  and select **Management Status** from the menu that appears. A filter control appears at the top of the view.




By default, the control is set to **Managed**, meaning only devices with a management status of **Managed** will be listed in the view.

- If you want to change the management status on which the view is filtered, do one of the following:
  - Click **Unmanaged** if you only want unmanaged devices to be listed in the view.
  - Click **Any** if you want both unmanaged and managed devices to be listed in the view. This is effectively the same as not filtering by management status.

## Filtering data by device type

If you want, you can filter devices by type (network or local).

### To filter data by device type:

- While on a device view, click the filter button  and select **Network/Local** from the menu that appears. A filter control appears at the top of the view.



By default, the control is set to **Network**, meaning only devices of type **Network** will be listed in the view.


- If you want to change the device type by which the view is filtered, do one of the following:
  - Click **Local** if you only want local devices to be listed in the view.

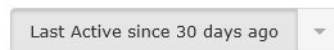
- Click **Any** if you want both network and local devices to be listed in the view. This is effectively the same as not filtering by device type.

## Filtering data by last active date

If you want, you can filter devices by the date on which they were last known to be active.

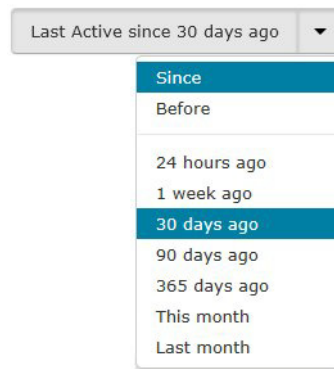
### To filter data by last active date:

1. While on a device view, click the filter button  and select **Last Active** from the menu that appears. A filter control appears at the top of the view.



By default, the control is set to **Last Active since 30 days ago**, meaning only devices with a last active date within the last 30 days will be listed in the view.

2. If you want to change the criteria on which the view is filtered, click the arrow to the right of the filter control. A menu will appear.



3. Do one of the following:
  - Choose **Since** if you only want to list devices that have a last active date that is less than the period specified in the menu. For example, if you set your filter to **Last Active since 30 days ago**, devices with a last active date which is more than 30 days ago will not be listed in the view.
  - Choose **Before** if you only want to list devices that have a last active date that is more than the period specified in the menu. For example, if you set your filter to **Last Active before 30 days ago**, devices with a last active date which is less than 30 days ago will not be listed in the view.
4. Choose one of the following periods:
  - 24 hours ago
  - 1 week ago
  - 30 days ago
  - 90 days ago

- 365 days ago
- This month  
This refers to the first day of the current calendar month.
- Last month  
This refers to the first day of the previous calendar month.


#### To enable or disable the last active filter:

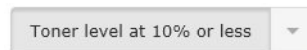
- Click the part of the filter control where the text is displayed (not the part where the arrow appears). This toggles the state of the filter from enabled to disabled and back. The appearance of the control changes to indicate the state of the filter.

### Filtering data by supply level

If you want, you can filter devices by their supply levels.

#### To filter data by supply level:

1. While on a device view, click the filter button  and select **Supply Level** from the menu that appears. A filter control appears at the top of the view.



By default, the control is set to **Toner level at 10% or less**, meaning only devices with a toner level for which the last reported value was 10% or less will be listed in the view.

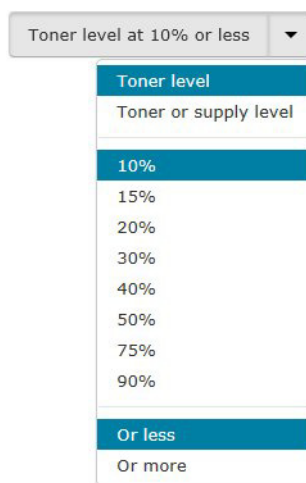
#### Note

If a device has multiple toner supplies (such as a color printer), and any one of those toner supplies matches the specified filter criteria, the device will be listed with all of its toner supplies, even those that did not match the specified filter criteria.

For example, if the control is set to **Toner level at 10% or less**, and a device has both a black toner at 70% and a cyan toner at 5%, the device will be listed in the view, and both the black and cyan toners will be listed along with it.



2. If you want to change the criteria by which the view is filtered, click the arrow to the right of the filter control. A menu will appear.



3. Do one of the following:
  - Choose **Toner Level** if you only want to list devices that have a toner level that meets the specified criteria.
  - Choose **Toner or Supply Level** if you want to list devices that have either a toner level or other supply level that meets the specified criteria.
4. Choose one of the following levels:
  - 10%
  - 15%
  - 20%
  - 30%
  - 40%
  - 50%
  - 75%
  - 90%
5. Do one of the following:
  - Choose **Or less** if you only want to list devices that have at least one supply with a level that is equal to or less than the level specified in the menu. For example, if you set your filter to **Toner level at 10% or less**, all devices with at least one toner level at or below 10% will be listed in the view.
  - Choose **Or more** if you only want to list devices that have at least one supply with a level that is equal to or more than the level specified in the menu. For example, if you set your filter to **Toner level at 10% or more**, all devices with at least one toner level at or above 10% will be listed in the view.


**To enable or disable the supply level filter:**

- Click the part of the filter control where the text is displayed (not the part where the arrow appears). This toggles the state of the filter from enabled to disabled and back. The appearance of the control changes to indicate the state of the filter.

**Filtering data by last supply request**

If you want, you can filter devices by the date of the last supply requested for the device.

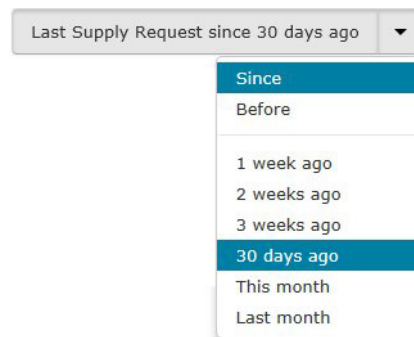
**To filter data by last supply request:**

- While on a device view, click the filter button  and select **Last Supply Request** from the menu that appears. A filter control appears at the top of the view.



By default, the control is set to **Last Supply Request since 30 days ago**, meaning only devices with at least one supply with a last supply request date within the last 30 days will be listed in the view.

- If you want to change the criteria on which the view is filtered, click the arrow to the right of the filter control. A menu will appear.



- Do one of the following:
  - Choose **Since** if you only want to list devices that have a last supply request date that is less than the period specified in the menu. For example, if you set your filter to **Last Supply Request since 30 days ago**, devices with at least one supply with a last supply request date which is less than 30 days ago will be listed in the view.
  - Choose **Before** if you only want to list devices that have a last supply request date that is more than the period specified in the menu. For example, if you set your filter to **Last Supply Request before 30 days ago**, devices with at least one supply with a last supply request date which is more than 30 days ago will be listed in the view.
- Choose one of the following periods:
  - 1 week ago

- 2 weeks ago
- 3 weeks ago
- 30 days ago
- This month  
This refers to the first day of the current calendar month.
- Last month  
This refers to the first day of the previous calendar month.


#### To enable or disable the last supply request filter:

- Click the part of the filter control where the text is displayed (not the part where the arrow appears). This toggles the state of the filter from enabled to disabled and back. The appearance of the control changes to indicate the state of the filter.

### Filtering data by text

If you want, you can filter devices by the text associated with any of the device fields.

#### To filter data by text:

1. While on a device view, in the text box to the left of the filter button , enter the text by which you want to filter the devices.


#### To remove the text filter:

- Delete the text from the filter text box.

### Removing a filter from a view

If you want, you can remove an individual filter from a view.


#### To remove a filter from a device view:

- While on a filtered device view, click the filter button . A menu will appear. Under **REMOVE FILTER**, choose the filter you want to remove from the view.

### Removing all filters from a view

If you want, you can easily remove all filters from a view.

#### To remove all filters from a device view:

- While on a filtered device view, click the filter button  and choose **Reset filters** from the menu that appears.

### Working with the default views

PrintFleet provides some views that reflect commonly requested functionality. However, because you can create, edit, and delete

views, the descriptions of the views on the following pages may not reflect the views currently available on your system.

**Table 2: Default Device Views**

Device View	Data Included
Technical View	device name, device status, page count for the current month, serial number, IP address, location, last active date, lifetime mono pages, lifetime color pages
Supplies Order View	device string, number of pages in last 30 days, current toner level/status, number of supplies being requested, date of last request
Alerts	alert definition name, device identifier, alert type, event description, event start date, event end date, event last active, status
Maps	group, map name, number of devices placed on each map, options for managing maps

## Device States

Some device views include a **Device Status** column which displays text indicating the most recent state of the device. The following table describes what each state means.

**Table 3: Understanding Device States**

State	Interpretation
Critical	The device is reporting an error.
Warning	The device is reporting a warning.
Stale	Data has not been collected from the device for a period exceeding the <b>Days before device stale</b> system setting.
Unknown	Data is not available from the device or not supported by PrintFleet.
Ok	The device is not reporting errors or warnings, and is not stale.

Note that the Critical and Warning states reflect the 14 error codes as defined in RFC 1759.

## Using the Technical View

The **Technical View** provides basic information about devices, including the device name, device status, monthly page count,

serial number, IP address, location, last active date, mono life count, and color life count. You can edit and override this information via options in the **Device View Manager**.

### To access the Technical View:

- On the **Device Views** menu, click **Technical View**.

Device Group	Device Name	Device Status	Pages this Month	Serial Number	IP Address	Location	Last Active	Mono Life Count	Color Life Count
HQ	KONICA MINOLTA bizhub 363	Warning	11	A1UE011014238	10.0.0.106		Today at 4:21 PM	33	0
East	Lexmark T634 4130420 551...	Critical	115	SER0123	10.0.0.232	Development	Today at 4:21 PM	278812	0
West	TASKalfa 250d	Ok	678	QJHY08729	10.0.0.50		Today at 4:21 PM	34732	17386

The **Technical View** will display the most significant status in the **Device Status** column. For example, if a device has a paper jam and is low on yellow toner, the column will reflect the paper jam error, rather than the yellow toner warning.

If you want more information about the status of a device, click on the device name link and you will be taken to the **Device Detail** page for that device. See “Working with the Device Detail page” on page 22.

## Using the Supplies Order View

You can use the **Supplies Order View** to monitor supply levels and to submit requests for replacement supplies. By default, the view includes the device string, pages for the past 30 days, and the **Toner Request** column which you can use to monitor and request toner. If you also want to monitor and request non-toner supplies (such as drums, belts, fusers, and so forth), you would need to add the **Misc. Supply Request** column to the view.

### Note

To create, edit, override, or delete a view you must belong to a role that has been assigned the **Device View Management** permission.

### To access the Supplies Order View:

- On the **Device Views** menu, click **Supplies Order View**.

Device Group	Device String	Pages in 30 Days (Chart)	Toner Request
HQ	KONICA MINOLTA pagepro 4650	7	Black 99%, Cyan 0%, Magenta 0%, Yellow 0%
East	Lexmark T634	398	Black 99%, Cyan 0%, Magenta 0%, Yellow 0%
West	Lexmark X343	0	Black 99%, Cyan 0%, Magenta 0%, Yellow 0%
	HC850	10	Black 99%, Cyan 0%, Magenta 0%, Yellow 0%
	Hamjet Office Printer Pro	665	Black 99%, Cyan 0%, Magenta 0%, Yellow 0%


The **Toner Request** column displays the level or status for each toner supply for the device, the date and time a replacement for the toner was last requested, and an edit box in which you can specify a quantity to request.

If included in the view, the **Misc. Supply Request** column displays the level or status for each non-toner supply for the device, the date and time a replacement for the supply was last requested, and an edit box in which you can specify a quantity to request.

**Note**

If you do not belong to a role that has been assigned the **Supplies** permission, the edit box will not be displayed in either the **Toner Request** column or the **Misc. Supply Request** column.

When using the **Supplies Order View**, be aware of the following:

- If you want more information about the status of a device, click on the device string link and you will be taken to the **Device Detail** page for that device. See “Working with the Device Detail page” on page 22.
- If you hover your mouse cursor over a toner level, a tooltip will appear showing the date and time the value was last updated.
- If you want more information about the status of a supply, click on the supply level and you will be taken to the **Supply Detail** page for that supply. See “Working with the Supply Detail page” on page 31.
- If you have previously requested a supply, an envelope icon  appears in the **Toner Request** column for that supply, along with the date and time the most recent request was made. If you hover your mouse cursor over the icon or date, a tooltip will appear showing the quantity of the supply that was requested at that time.
- If you have added quantities to the **Toner Request** column, but want to clear all quantities, you can do so by clicking the down arrow to the right of the **Create Supply Request** button, and choosing the **Clear quantities and cancel** menu option that appears.

**Requesting supplies.** If you belong to a role that has been assigned the **Supplies** permission, you can request supplies from the **Supplies Order View** (or any device view that includes the **Toner Request** or **Misc. Supply Request** columns). PrintFleet will generate an email summarizing the supply request. This email can be directed to the person within your organization who is responsible for ordering supplies.

**To request supplies:**

1. Under either the **Toner Request** or **Misc. Supply Request** column, in the row for the supply you want to request, do either of the following:

- In the edit box, enter the number of supplies you want to request.
  - Position your mouse cursor to the right of the edit box, then use the up and down arrows that appear to adjust the number of supplies you want to request.
2. Repeat step 1 for each additional supply you want to request.
  3. When you are ready to proceed with the request, click **Create Supply Request**. The **Supply Request** page appears.
  4. On the **Supply Request** page, do the following:
    - Confirm the supplies and quantities you want to request. Use the edit boxes or arrows to adjust the quantities if necessary.
    - In the **Email to** box, enter the email address of the person to whom you want to send the request. If necessary you can type multiple addresses, separated by commas.
    - In the **Subject** box, enter a subject line for the request email.
    - In the **Notes** box, enter any additional information you would like to appear in the body of the request email.
    - The details of the supply request will be summarized in the body of the email that is sent. This information may be sufficient for your needs. However, depending on your company's ordering system, you may be able to expedite the process by providing the information in an XML or CSV format. Use the **Attachment** list to specify which format to attach to the supply request email.
    - Click **Send Supply Request**. A confirmation dialog opens.
  5. Click **Send**.

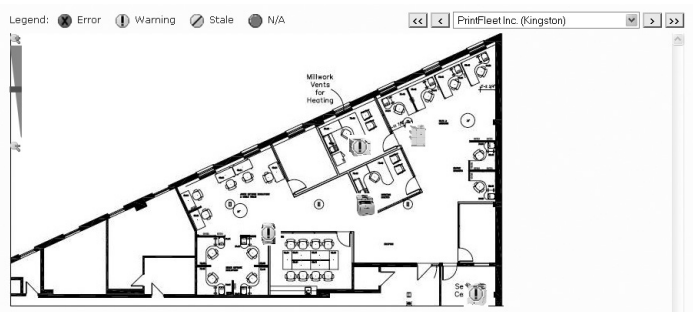
For each supply requested, the supply request email displays the following information:

- Group breadcrumb
- Device string
- Serial number
- Asset number
- Location
- Supply name
- OEM Part Number (if available)
- Quantity requested

## Using the Maps View

The **Maps View** allows you to view, upload, and place images of document output devices, computing devices, people, and other miscellaneous items on one or more maps. Document output

devices will display icons to represent their status. A legend for the icons is displayed above the map.



Most browsers also support hovering your mouse pointer over the device to view basic device information, with a link to the device's detail view. See "Working with the Device Detail page" on page 22.

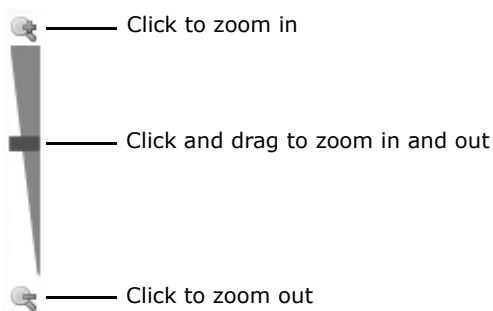


### To access the Maps view:

- On the **Device Views** menu, click **Maps**.

### To view a map:

- In the **Maps View**, under **Options**, click **View**.
- Optionally, use the zoom bar or your mouse scroller to zoom in and out on the map image.



### To upload a new map:

- In the **Maps View**, click **Add Map**. Alternatively, click **Edit** or **View** for an existing map and select **New** in the **Settings** tab.
- Select a group.
- In the **Map Name** box, enter a recognizable title for the map.
- In the **Map image** box, type the location of the map image you want to upload, or click **Browse** to navigate to the image.



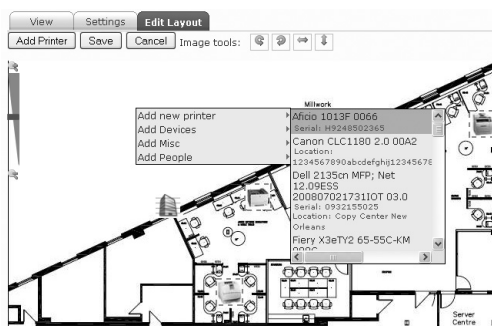
5. Click **Add Map**.

**Note**

Map images must be in .jpg, .gif, .png, .bmp, .tiff, or .wmf format.

**To place imaging devices on a map:**

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. Click the **Edit Layout** tab.
3. Do one of the following:
  - Click **Add Printer**, select the device you want to add from the list, and then click the location on the map that you want to place the device.
  - Right-click the place on the map image where you want to place a device, point to **Add new printer**, and then select a device from the list.
4. Drag the device until it is in the precise location you want it.
5. Click **Save**.



**To place computing devices, people, or other miscellaneous icons on a map:**

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. Click the **Edit Layout** tab.
3. Right-click the place on the map image where you want to place a computer, building, or person, and do one of the following:
  - To add a computer, point to **Add Devices**, and select the icon you want to add from the list.
  - To add a person or group of people, point to **Add People**, and select the icon you want to add from the list.
  - To add other miscellaneous icons, point to **Add Misc**, and select the icon you want to add from the list.
4. Drag the object until it is in the precise location you want it.
5. Click **Save**.





### To move an imaging device image or other icon:

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. Click the **Edit Layout** tab.
3. Click and drag the icon you want to move to the new location.
4. Click **Save**.

### To remove an imaging device image or other icon:

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. Click the **Edit Layout** tab.
3. Right-click on the icon you want to remove, and then click **Remove**.
4. Click **Save**.

### To rotate or flip a map:

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. Click the **Edit Layout** tab.
3. Do one or more of the following to rotate and/or flip the map to the correct position:
  - Click  to rotate the map image counterclockwise.
  - Click  to rotate the map image clockwise.
  - Click  to flip the map image horizontally.
  - Click  to flip the map image vertically.
4. Click **Save**.

### To change a map image or title:

1. In the **Maps View**, under **Options**, click **Edit** for the map you want to edit.
2. In the **Settings** tab, do one or more of the following:
  - Enter a new title for the map in the **Map name** box, and click **Change**.
  - Click **Browse** or type in the location of a replacement image in the **Select file** box, and then click **Upload**.

### To delete a map:

1. In the **Maps View**, under **Options**, click **Delete** for the map you want to delete.
2. Click **OK** to confirm deletion.

### To download a map image:

1. In the **Maps View**, under **Options**, click **Edit** or **View**.
2. In the **Settings** tab, click **Download** and save the image file to your computer.

## Using the Alerts View

When the conditions specified in an alert definition are met, an alert event is automatically created. You can use the **Alerts View** to view the alert events that have been created. The **Alerts View** shows only the alert events associated with a selected group. By default, no group is selected when you open the page, so the table of alert events will appear empty.

### To view the alert events for a group:

- On the **Alerts View**, in the left pane, select the group for which you want to view the events. After a moment the alert events appear. If there are no events associated with the selected group, the **Alerts View** displays 'No items' at the bottom of the page.

For each alert event, the **Alerts View** displays the following:

- **Alert Definition**—Displays the name of the corresponding alert definition.
- **Identifier**—Displays the name of the device associated with the event. You can click the device name to go to the associated **Device Detail** page. See "Working with the Device Detail page" on page 22.
- **Type**—The type of alert definition (such as Device or DCA).
- **Event Description**—A description of why the event occurred (such as "Error Code: LCD Display "Door open" active.").
- **Event Start Date**—For an alert of type Device, the date and time of the first Printer DCA scan for which the reported device values met the conditions specified in the alert definition. For an alert of type DCA, the date and time of the first check by the alert engine for which the conditions specified in the alert definition were met. Note that this does not include the initial grace period in which the Printer DCA was stale. For example, if your alert definition was set up to generate an alert event after a Printer DCA had been stale for 3 days, the **Event Start Date** would not coincide with the start of the 3 days, but instead with the first missed report after those 3 days had elapsed.
- **Event End Date**—For an alert of type Device, the date and time of the first Printer DCA scan for which the reported device values did not meet the conditions specified in the alert definition. For an alert of type DCA, the date and time of the first check by the alert engine for which a report was received from the Printer DCA.
- **Event Last Active**—For an alert of type Device, the date and time of the last Printer DCA scan received for which the reported device values met the conditions specified in the alert definition. For an alert of type DCA, the date and time of the last check by the alert engine for which no report was received from the Printer DCA.
- **Status**—For an alert definition using a Page Recurring or Date Recurring condition type, a gray bell is displayed. For alert definitions using other condition types, a gold bell is displayed

while the event is active, and no icon is displayed once the event has ended.

Events associated with disabled alert definitions will not be displayed on this page.


## Creating custom device views

An unlimited amount of custom device views can be created, so that you can view the exact information you want, in the way you want to view it. Custom device views will be added to the **Device Views** menu for groups selected to have access.

### Note

To create, edit, override, or delete a view you must belong to a role that has been assigned the **Device View Management** permission.

### To create a custom device view:

- Do one of the following:
  - On the **Settings** menu, click **Device View Manager**, then click **New View** on the **Device View Manager** page.
  - From any device view, click the manage views button , then choose **New View** from the menu that appears.
- On the **Add/Edit Device View** page, in the **Columns** area, select the data items you want included in the view. In general, you will want to include at least one data item that identifies a device, for example, device name or serial number. Custom Device Fields are denoted by yellow fill.
- Click and drag the selected data items into the order you want them to appear on the view. The item at the top of the list will be displayed as the first item on the left side of the view.
- Enter a title for the custom device view in the **Name** box.
- From the **Default Sorting** lists, choose a default column you want the data to be sorted by initially, and whether you want the sorting to be ascending or descending.
- From the **Apply To** list, select whether you want the device view to be available to only yourself (**Me**) or to specific **Groups**. If you select Groups, you must select one or more groups that the view will be available to. Selecting the root group will make the view available to everyone.
- Click **Save**.

### To edit a custom device view:

- On the **Settings** menu, click **Device View Manager**.
- In the row of the device view you want to change, click **Edit**.
- Change any properties of the view, including name, default sorting, apply to properties (including which specific groups can access the view), and columns (data items).
- Click **Save**.

### To delete a custom device view:

1. On the **Settings** menu, click **Device View Manager**.
2. In the row of the device view you want to remove, click **Delete**.
3. When prompted, click **Confirm**.


You can use the override function to allow yourself or specified groups to see one view instead of another. This view could be a slight variation of the original view, or it could be something entirely different. When you delete an override, the properties of the original device view will be reinstated.

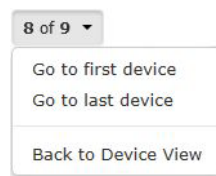
### To create a device view override:


1. On the **Settings** menu, click **Device View Manager**.
2. In the row of the device view you want to create an override for, click **Override**.
3. Create your override view by entering a **Name**, choosing **Default Sorting** and **Apply To** properties, and selecting data items in the **Columns** area.
4. Click **Save**.

## 2.2 Working with the Device Detail page

The **Device Detail** page displays all information relevant to a specific device. The device name and group breadcrumb appear at the top of the page.

In the upper-right corner of the **Device Detail** page, a counter **8 of 9** displays the ordinal position of the current device within the most recent device view. If you want to switch to a different device from the same device view you can click the adjacent navigation buttons  to move backward and forward among the devices, or you can click the counter and choose an option from the menu that appears.



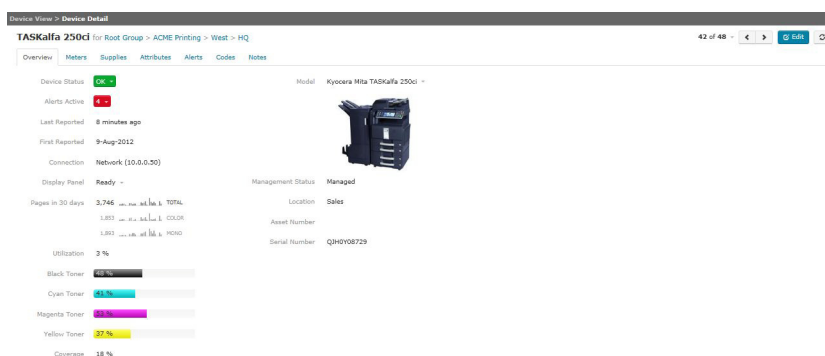
The information displayed in the **Device Detail** page is read only. If necessary you can edit some properties of the device by clicking the **Edit** button . This will take you to the **Device Information** tab of the **Device Information** page. For information on using the **Device Information** tab, see "Editing device information" on page 100.

You can click the **Refresh** button  to refresh the information displayed on the **Device Detail** page.

The **Overview** tab displays information identifying the device, some high-level information about meters and supplies, and an image of the device model if available. The **Device Detail** page has other tabs for accessing information about meters, supplies, attributes, alerts, codes, and notes related to the device.

### To access the Device Detail page:

- Click on a device name link anywhere in the system. Usually this is while using one of the device views. See “Working with device views” on page 6.



## Working with the Overview tab

The **Overview** tab displays the following information:

- Device Status** — Displays the status (OK, Warning, or Critical) associated with the most severe active error code for the device. If you hover your mouse cursor over the **Device Status** indicator a tooltip will indicate how many codes are currently active. To see the active codes, click the **Device Status** indicator. A dropdown window opens showing each active code and when it was first reported. You can also click the **View past codes** link to open the **Codes** tab for the device.
- Alerts Active** — Displays the number of alerts that are currently active for the device. If there are active alerts you can click the **Alerts Active** indicator to open a dropdown window. From the dropdown window you can:
  - View the active alert events and when they were first reported.
  - Click the **View past alerts** link to open the **Alerts** tab for the device where you can view alert events for the device that have been closed.
  - View a list of the enabled alert definitions that are applicable to the device.
  - Click one of the listed alert definitions to view or edit the definition.

- Click **Create a new alert definition** to create a new alert definition.
- **Last Reported** — Displays the last time an update was received from the device.
- **First Reported** — Displays the date and time that the device was first detected on your system by PrintFleet.
- **Connection** — Displays the connection type (**Network** or **Local**) and the IP address of the device (or its host computer if it is a local device).
- **Display Panel** — Displays the last reported message to appear on the device's LCD display. You can click the message to view the most recent LCD display messages. From the dropdown window that appears you can also click the **View history** link to open the **Attribute History** page where you can see all reported LCD display messages for the device. Note that some devices do not have an LCD attribute, so this field may not be displayed for all devices.
- **Pages in 30 days** — Displays the number of pages printed in the last 30 days, along with a bar graph. If the device is color capable, there will be separate entries for Total, Color, and Mono pages. If you hover your mouse cursor over the bar graph a tooltip will display the page count for the corresponding day.
- **Utilization** — Displays the percentage of the total number of potential pages that the device has printed. If you hover your mouse cursor over the value it will display the date on which the value was last updated.
- **Black Toner** — Displays the percentage of black toner remaining. If you hover your mouse cursor over the value it will display the date on which the value was last reported. If you click the value it will open the associated **Supply Detail** page.
- **Cyan Toner** — Displays the percentage of cyan toner remaining. If you hover your mouse cursor over the value it will display the date on which the value was last reported. If you click the value it will open the associated **Supply Detail** page.
- **Magenta Toner** — Displays the percentage of magenta toner remaining. If you hover your mouse cursor over the value it will display the date on which the value was last reported. If you click the value it will open the associated **Supply Detail** page.
- **Yellow Toner** — Displays the percentage of yellow toner remaining. If you hover your mouse cursor over the value it will display the date on which the value was last reported. If you click the value it will open the associated **Supply Detail** page.
- **Coverage** — Displays the average percentage of the total printable area of a letter size sheet of paper that is covered by toner. If you hover your mouse cursor over the value it will display the date on which the value was last updated.
- **Model** — Displays the name of the model associated with the device. If available, a picture of the corresponding model is also

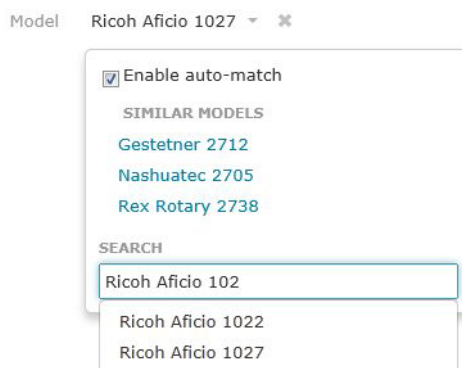
displayed. To see the properties associated with the model, click the model name.

- **Management Status** — Displays the management status (Managed or Unmanaged) of the device.
- **Location** — Displays the location of the device (provided one has been specified).
- **Asset Number** — Displays the asset number of the device (provided one has been specified).
- **Serial Number** — Displays the serial number of the device (provided one has been specified).

PrintFleet tries to automatically associate each new device with a corresponding model from its model database. Most of the time this works very well, but occasionally a device gets associated with the wrong model. If necessary, you can manually associate the device with a different model.

### To change the model associated with the device:

1. Click the **Edit** icon to the right of the **Model** field. A popup window opens.



2. If any other models in the model database share the same internal device description, they will be listed under **Similar Models**. If you want you can click one of the listed models to associate it with the device.

#### Note

This may be the case for models which are rebranded and sold under two or more different names. For example, the models Ricoh Aficio 1027, Gestetner 2712, Rex Rotary 2738, and Nashuatec 2705 are all essentially the same model, and all identify themselves using the same internal description 'NRG 2705/2738/2712'. There is no way for PrintFleet to automatically determine which of these models a customer has, so it might be necessary for you to indicate the one that you have by selecting it from the **Similar Models** list.



3. If the model you want to associate with the device is not listed under **Similar Models**, it might still exist in the model database. You can try to locate a model in the database by entering the model name in the **Search** box. As you type, a list of model names that include the text you have entered is displayed below the **Search** box. If you see the model you want displayed in the list, click it to associate it with the device.

**Tip**

When using the **Search** box, keep the following in mind:

- If you enter multiple terms separated by spaces, only the entries that include all of the terms will be displayed. For example, if you typed 'Canon 1000' it would display all entries that included both 'Canon' and '1000', such as the Canon BJC-1000 and the Canon LBP-1000 models.
- You might start by just typing the model number (such as '1000'), and if there are still too many results consider adding more information (such as 'BJC-1000').
- The results list is limited to 15 items, so you may need to type additional characters to refine your search sufficiently.

4. PrintFleet regularly updates the printer model database and makes these updates available to customers. Selecting the **Enable auto-match** check box allows PrintFleet to automatically check for a better match for the device each time you update your model database. The check box is cleared when you manually associate a model with a device, including devices that were manually matched in a previous version of PrintFleet Optimizer.

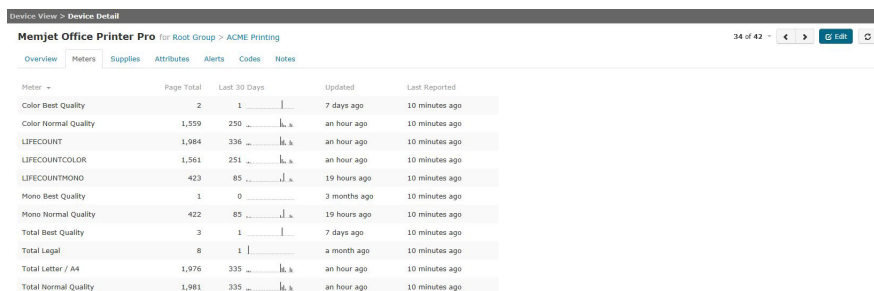
## Working with the Meters tab

The **Meters** tab displays the following information for each of the standard, virtual, and device-specific meters for the device:

- **Meter** — The name of the meter.
- **Page Total** — The total number of pages for the meter.
- **Last 30 Days** — The number of pages for the meter over the last 30 days. If you hover your mouse cursor over the bar graph, a tooltip will display the page counts for the individual days.
- **Updated** — The last time the meter value changed. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last meter value change.
- **Last Reported** — The last time a value was reported for the meter. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last report.

**To access meters information:**

- On the **Device Detail** page, click the **Meters** tab.



Meter	Page Total	Last 30 Days	Updated	Last Reported
Color Best Quality	2	1	7 days ago	10 minutes ago
Color Normal Quality	1,559	250	an hour ago	10 minutes ago
LIFECOUNT	1,984	336	an hour ago	10 minutes ago
LIFECOUNTCOLOR	1,561	251	an hour ago	10 minutes ago
LIFECOUNTTHOHO	423	85	19 hours ago	10 minutes ago
Mono Best Quality	1	0	3 months ago	10 minutes ago
Mono Normal Quality	422	85	19 hours ago	10 minutes ago
Total Best Quality	3	1	7 days ago	10 minutes ago
Total Legal	8	1	a month ago	10 minutes ago
Total Letter / A4	1,976	335	an hour ago	10 minutes ago
Total Normal Quality	1,981	335	an hour ago	10 minutes ago

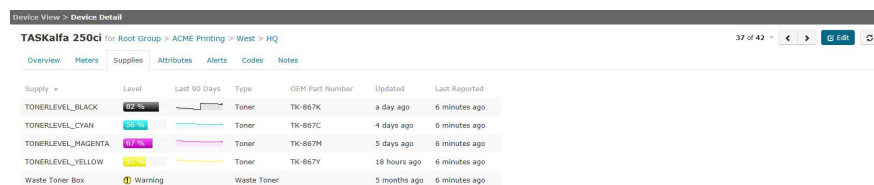
**Working with the Supplies tab**

The **Supplies** tab of the **Device Detail** page displays the following information about toner and non-toner supplies:

- Supply** — The name of the supply.
- Level** — The last level (or status) reported by the supply.
- Last 90 Days** — For supplies that report levels, a bar graph of the level values over the last 90 days. If you hover your mouse cursor over the bar graph, a tooltip will display the level values for the individual days.
- Type** — The type of supply (such as Toner, Fuser, or Developer).
- OEM Part Number** — The OEM part number of the supply. These values are properties of the model that is associated with the device.
- Updated** — The last time the supply level changed. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last supply level change.
- Last Reported** — The last time a level was reported for the supply. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last report.

**To access supplies information:**

- On the **Device Detail** page, click the **Supplies** tab.



Supply	Level	Last 90 Days	Type	OEM Part Number	Updated	Last Reported
TONERLEVEL_BLACK	82%		Toner	TK-857K	a day ago	6 minutes ago
TONERLEVEL_CYAN	55%		Toner	TK-857C	4 days ago	6 minutes ago
TONERLEVEL_MAGENTA	24%		Toner	TK-857M	5 days ago	6 minutes ago
TONERLEVEL_YELLOW	55%		Toner	TK-857Y	18 hours ago	6 minutes ago
Waste Toner Box	Warning		Waste Toner		5 months ago	6 minutes ago

**To view more detailed information for a supply:**

- On the **Supplies** tab, click anywhere in the row of the supply you want to view. The **Supply Detail** page opens. For information on using the **Supply Detail** page, see “Working with the Supply Detail page” on page 31.

**Working with the Attributes tab**

The **Attributes** tab displays additional device information. This information will vary by device, but may include such things as

firmware versions, amount of memory, duplex capability, and so forth. Any custom device fields that apply to the associated device also appear on this page. For each attribute, the **Attributes** tab of the **Device Detail** page displays the following information:

- **Attribute** — The name of the attribute.
- **Current Value** — The last value reported for the attribute.
- **Source** — Indicates whether the value was reported directly by the device, or was calculated using other information.
- **Updated** — The last time the attribute value changed. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last change.
- **Last Reported** — The last time a value was reported for the attribute. If you hover your mouse cursor over the value, a tooltip will display the specific date and time of the last report.

### To access miscellaneous device information:

- On the **Device Detail** page, click the **Attributes** tab.

Attribute	Current Value	Source	Updated	Last Reported
BLACK_COVERAGE	5.7%	Device	6 days ago	5 minutes ago
ColorCoverage	6.00	Device	6 days ago	3 minutes ago
CYAN_COVERAGE	2.0%	Device	6 days ago	5 minutes ago
DEVICENAME	Memjet Office Printer Pro K255FPM00205	Device	4 months ago	5 minutes ago
DUPLEX	FALSE	Device	4 months ago	5 minutes ago
ENTERPRISENUMBERS	38191	Device	4 months ago	5 minutes ago
FIRMWARE_SYSTEM	K00.10.0	Device	4 months ago	5 minutes ago
hwDeviceID	1.3.6.1.4.1.38191.2.2.2	Device	4 months ago	5 minutes ago
IPADDRESS	10.0.0.170	Device	4 months ago	5 minutes ago

### To view the history for an attribute:

- On the **Attributes** tab, click anywhere in the row of the attribute for which you want to view the history. The **Attribute History** page opens.

## Working with the Alerts tab

The **Alerts** tab displays all active alert events for the device and any alert events for the device that were active within the last 90 days.

### To access alert events:

- On the **Device Detail** page, click the **Alerts** tab.

Alert	Time
Paper Jam alert started	2 hours ago
Active Error Code: Standard Blt "Jammed" active.	

Alerts watching this device:

- State DCA
- Device Error
- Paper Jam
- Toner Level < 10

Create a new alert definition

By default, the alert events are displayed as a timeline. Clicking the **Grid** button will toggle the display between the timeline and a grid.

The timeline view presents each change related to an alert as a separate entry in a list. This is useful for tracking the changes to

alerts over time, including updates to the values of the conditions being monitored. If you hover your mouse cursor over one of the entries in the timeline view, the events associated with other alerts will be dimmed, making it easy to see just the entries for the alert you are interested in. When viewing the alert events as a timeline, each list entry includes the following information:

- Name of the alert definition
- Whether the alert started, ended, or was updated
- The amount of time that has passed since the entry was created
- The specific value for the condition being monitored at the time the entry was created.

The grid view presents each alert event on a separate row of the grid. This is useful when you just want to see the high-level information about an alert (such as when it started and what its current status is) and do not care about any intermediate updates. When viewing the alert events as a grid, the following information is displayed for each alert event:

- **Alert** — The name of the associated alert definition.
- **Last Description** — The specific value for the condition being monitored at the time the entry was created.
- **Started** — How long ago the alert event was created. If you hover your mouse cursor over the value, a tooltip will display the specific date and time the event was created.
- **Duration** — The amount of time the alert event was active. If you hover your mouse cursor over the value, a tooltip will display a more precise value.
- **Status** — Indicates whether an alert event is active or has ended. If you hover your mouse cursor over the value, a tooltip will display the last time the conditions of the associated definition were known to have been met (for active events), or the specific date and time the event ended.

By default the **Alerts** tab displays both active and recently closed alert events. The **Active** button displays the number of active alert events for the device. If you want you can click the **Active** button to filter out the events that have ended and display just the active ones.

The **Alerts** tab also displays links to any alert definitions that are currently associated with the device. You can click these links to view or edit the definitions, or you can click **Create a new alert definition** if you want to create a new alert definition.

## Working with the Codes tab

The **Codes** tab displays all active service or error codes for the device and any closed codes for the device that were active within the last 90 days.

## To access codes:

- On the **Device Detail** page, click the **Codes** tab.



By default, the codes are displayed as a timeline. Clicking the **Grid** button will toggle the display between the timeline and a grid.

The timeline view presents each change related to a code as a separate entry in a list. This is useful for tracking the changes to codes over time. If you hover your mouse cursor over one of the entries in the timeline view, the entries associated with other codes will be dimmed, making it easy to see just the entries for the code you are interested in. When viewing the codes as a timeline, each list entry includes the following information:

- Name of the code
- Whether the code started or ended
- The amount of time that has passed since the entry was created
- The specific value for the code at the time the entry was created.

The grid view presents each code on a separate row of the grid. This is useful when you just want to see the high-level information about a code (such as when it started and what its current status is). When viewing the codes as a grid, the following information is displayed for each code:

- Severity** — The severity (Info, Critical or Warning) of the error code.
- Code** — A textual description of the error code.
- Type** — The type (Error Bit, Error Code, Service Code, or Vendor Code) and specific value of the error code.
- Started** — How long ago the error code was first reported. If you hover your mouse cursor over the value, a tooltip will display the specific date and time the error code was first reported.
- Duration** — The amount of time the error code was active. If you hover your mouse cursor over the value, a tooltip will display a more precise value.
- Status** — Indicates whether a code is active or has ended. If you hover your mouse cursor over the value, a tooltip will display the last time the code was reported (for active codes), or the specific date and time the code ended.

By default the **Codes** tab displays both active and recently closed codes. The **Active** button displays the number of active codes for the device. If you want you can click the **Active** button to filter out the closed codes and display just the active ones.

## Working with the Notes tab

The **Notes** tab displays notes that have been manually entered for the device in the last 90 days. You can use the **Notes** tab to record device specific information that is not captured elsewhere in the system.

### To access notes:

- On the **Device Detail** page, click the **Notes** tab. This will display any notes that have been added for the device along with the date and time each note was added.



### To add a note:

- On the **Notes** tab, enter the text you want to add in the edit box at the top of the page, then click the **Add Note** button that appears.

### Note

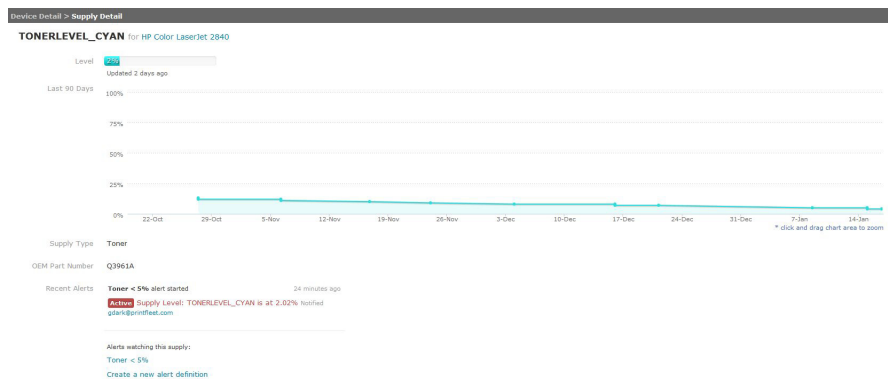
There is a limit of 1000 characters per note.

## Working with the Supply Detail page

The **Supply Detail** page displays information for a specific supply for a device. This can help you when trying to make decisions about when to request a supply.

### To access supply details:

- Do one of the following:
  - On the **Supplies** tab of the **Device Detail** page, click the name of a supply.
  - On a device view that contains either the **Toner Request** or **Misc. Supply Request** columns, click a supply level. The **Supply Detail** page appears.



The **Supply Detail** page displays:

- the last reported level for the supply
- a chart of the supply level values over the last 90 days
- the type of supply
- the part number of the supply (if available)
- a summary of recent alert activity related to the supply
- a list of any alert definitions currently applied to the supply

If any alert definitions are currently applied to the supply, you can click on the name of the alert definition to open the alert definition.

**Working with the supply level chart.** You can click and drag on the supply level chart to zoom in on a specific time period. To return to the original zoom setting for the chart click the **Reset zoom** button that appears. The chart will also display an icon at any point where PrintFleet has detected the supply has been replaced.

Some devices report supply levels as states rather than specific values. For these devices the **Level** will read **OK**, **Warning**, or **Critical** instead of a percentage. Each of these states has a corresponding range of potential supply levels. For example, a supply in a **Warning** state might have an actual level anywhere between 10% to 25%. To reflect this uncertainty, a darker shaded band will be displayed below the line on the graph to indicate the range of possible levels associated with the current state.

## Working with the Remote Configuration page

If you belong to a role that has been granted the **Remote Configuration** permission, and you are viewing the device details for a device that is being monitored by the **Canon Remote Maintenance System**, you can use the **Remote Configuration** page to change the values for some of the device's attributes. Changing the attributes for a device in this way can save you having to dispatch a technician to make the equivalent change on site.

**To access the Remote Configuration page:**

- From the **Device Detail View**, click the **Remote Configuration** button  that appears in the upper right corner.

### Note

The button does not appear for unsupported devices, or if you do not have the **Remote Configuration** permission.

The **Remote Configuration** page appears.

Device Detail > Remote Configuration

Remote Configuration for Canon IR-ADV C2020 36.01  
Saving changes will update fields directly on the remote device.

Save configuration Cancel changes

Connectivity

Domain Name: printfleet.com

Host Name: Canon4C7E95

IPv4 Address: 10.0.0.26

Subnet Mask: 255.255.255.0

Gateway Address: 10.0.0.1

Primary DNS: 10.0.0.4

Secondary DNS: 10.0.0.0

DNS Dynamic Update: On

Use IPv4: On

Use DHCP: Off

Use BOOTP: Off

Use RARP: Off

LPD Print: On

LPD Banner: Off

RAW Print: On

RAW Mode: Off

IPP Print: Off

Commands

Reboot Remotely reboots this device

Attributes

Device Name: Canon imageRUNNER ADVANCE C2020

Location: Marketing

System Manager: Greg Rammage

Phone:

Comment:

Contact Person: Greg Rammage

Phone: 355-5016

Comment:

The fields that are displayed on the **Remote Configuration** page may vary from one device to another. A description of the most common connectivity fields is provided below:

**Table 4: Remote Configuration Connectivity Fields**

Attribute	Description
Domain Name	The Domain Name of the device.
Host Name	The Host Name of the device.
IPv4 Address	The IPv4 Address of the device.
Subnet Mask	The Subnet Mask of the device.
Gateway Address	The Gateway Address of the device.
Primary DNS	The Primary Domain Name System (DNS) of the device.
Secondary DNS	The Secondary DNS of the device.
DNS Dynamic Update	Turns DNS Dynamic Update on or off for the device.
Use IPv4	Set to On if you want the device to use Internet Protocol version 4 (IPv4).
Use DHCP	Set to On if you want the device to use Dynamic Host Configuration Protocol (DHCP).
Use BOOTP	Set to On if you want the device to use Bootstrap Protocol (BOOTP).



**Table 4: Remote Configuration Connectivity Fields**

Attribute	Description
Use RARP	Set to On if you want the device to use Reverse Address Resolution Protocol (RARP).
LPD Print	Set to On if you want the device to print using the Line Printer Daemon Protocol (LPD).
LPD Banner	Set to On if you want the device to print an LPD Banner page at the start of each print job.
RAW Print	Set to On if you want the device to print using the RAW Protocol.
RAW Mode	Set to On if you want the device to use RAW Mode.
IPP Print	Set to On if you want the device to print using the Internet Printing Protocol (IPP).

There are also a number of device attributes that you can modify using the **Remote Configuration** page. A description of the most common attribute fields is provided below:

**Table 5: Remote Configuration Attribute Fields**

Attribute	Description
Device Name	The name of the device. <b>NOTE:</b> Despite sharing the same name, this <b>Device Name</b> attribute is not connected with the <b>Device Name</b> field displayed elsewhere in PrintFleet Optimizer.
Location	The physical location of the device. <b>NOTE:</b> This is the same <b>Location</b> attribute that is displayed elsewhere in PrintFleet Optimizer. However, this page displays the device's value in real time, whereas elsewhere in PrintFleet Optimizer the value is gathered indirectly by the Printer DCA and only updated at scheduled intervals.
System Manager	The name of the system manager for the device.
Phone	The phone number associated with the system manager for the device.

**Table 5: Remote Configuration Attribute Fields**

Attribute	Description
Comment	A comment about the system manager for the device.
Contact Person	The name of the contact person for the device.
Phone	The phone number associated with the contact person for the device.
Comment	A comment about the contact person for the device.

**To change one or more of the displayed values:**

- Do one of the following:
  - If the value is displayed in an edit box, type the new value you want to use.
  - If the value is displayed as a menu option, click the arrow to the right of the option and select a new value from the menu that appears.

When you have made a change, the changed field is highlighted until you either save or cancel your changes.
- Repeat step 1 for each additional change you want to make.
- When you have made all of the changes you want to make, click **Save configuration** to save the combined changes.

You can also use the **Remote Configuration** page to force the device to reboot itself.

**To force a reboot of the device:**

- Click **Reboot**. Note that there may be a delay between the time the reboot command is issued and when the device receives and acts on the command.

## Chapter 3 Reports

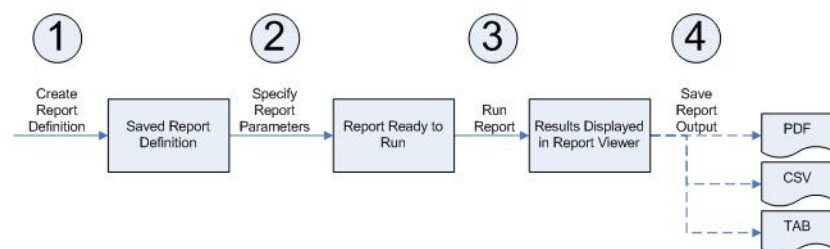
Reports in one word – flexible. You can easily create customizable output which can then be displayed in a number of intuitive graphical arrangements. In other words, PrintFleet Optimizer reports let you view data when and how you want it.

This chapter discusses:

- Overview of Reports
- Report options
- Creating report definitions
- Specifying report parameters
- Viewing and saving reports
- Scheduling reports
- Managing report definitions
- Managing report schedules
- Report Security

### 3.1 Overview of Reports

Using reports generally involves the following main stages:



In this section you will find information on every stage of the process, including:

- Planning your report

Creating reports is so easy that you may be tempted to jump right in, but for the best results it is worth taking some time to familiarize yourself with the powerful options available to you,

and then decide how to most effectively apply these options to address your particular needs. See “Report options” on page 38.

- Creating report definitions

A report definition describes the structure of the report: what to include, and how it should be arranged. You can reuse the same definition as many times as you want, and you can specify different report parameters each time you use the report definition. See “Creating report definitions” on page 48.

- Specifying report parameters

Report parameters determine what data to use with a report definition. For example, you can create a generic report definition for devices, then run that report definition multiple times, specifying a different group each time. See “Specifying report parameters” on page 55.

- Running reports

Once you have your report definitions set up how you want them, you can run them whenever you want. Sometimes you will want to schedule a report to run at a certain time, but you can also select a definition and run it at any time. See “To run a report definition:” on page 56.

- Viewing and saving reports

When you run a report, PrintFleet Optimizer displays it on screen. You can navigate around within the report, and if necessary go back and change the parameters and run the report again. Even if you rerun a report using the same parameters, the report may be different if new data has been processed in the interim.

If you want to have a more permanent copy of the report, either to store or to send to someone else, you can save the report in PDF, CSV, or TAB format. See “Viewing and saving reports” on page 57.

- Scheduling reports

For reports that you know you will want to generate regularly, you can set up a schedule. When the scheduled time arrives the report is automatically run and emailed to specified users. See “Scheduling reports” on page 57.

- Managing report definitions

As you create and refine your report definitions you will likely find it convenient to be able to perform various management activities, such as locating, editing, copying, and deleting report definitions. See “Managing report definitions” on page 58.

- Managing report schedules

Just as with report definitions, as you create and refine your report schedules you will likely find it convenient to be able to locate, edit, copy, and delete report schedules. See “Managing report schedules” on page 59.

## Types of reports

You can create the following types of reports:

**Standard reports.** These reports are created using the interface provided. While this interface places certain restrictions on the data you can access and on how the results are presented, it makes it easy for even the least experienced users to create reports that make sense and look good. See “Creating a Standard report definition” on page 48.

**SQL reports.** These reports require you to create and enter your own SQL, so you must have knowledge of both SQL syntax and the PrintFleet database schema. Assuming you have the necessary knowledge and permissions, you can create SQL reports that give you greater flexibility in the information you can access than is possible with a standard report. See “Creating a SQL report definition” on page 51.

**Executive reports.** An executive report is essentially a report that combines other standard and/or SQL reports. Executive reports are typically used to summarize various aspects of your business, such as at the end of each fiscal quarter. An executive report can have cover pages at the front and back, and the cover pages can display custom branding (such as your corporate logo). See “Creating an Executive report definition” on page 52.

## Sample Reports

A number of sample reports are automatically provided with PrintFleet Optimizer. To ensure the integrity of these reports is maintained, these reports are not editable regardless of what permissions you have been assigned. However, if you have been assigned to a role that has been granted the **Report Management** permission, you can create a copy of a sample report and make whatever changes you like to the copied version.

## 3.2 Report options

There are various things you can do to make a standard report appear more professional, or to highlight an aspect of the information being presented. It will be helpful to familiarize yourself with these options before you start creating your report definitions.

<b>Note</b>	With the exception of charts, these options are not available for use with a SQL report.
-------------	--

### Nesting

Nesting gathers together all of the rows that share a value for a specific field, creates headings based on the field, and displays the remaining fields under the headings. PrintFleet does all of this for

you automatically, but for educational purposes it may help to think of it as following these steps:

1. First, the data in the report is automatically sorted in ascending order according to the specified field (Manufacturer in this example).

**BEFORE**

Manufacturer	Model	Pages
Ricoh	Aficio MP 2550SP	63428
Canon	imageRUNNER 3225	8954
Hewlett-Packard	LaserJet 4250	72542
Canon	imageRUNNER 3235	2321
Ricoh	Aficio MP 2550SP	24593
Hewlett-Packard	LaserJet 4250	86524
Hewlett-Packard	LaserJet 4000	3442
Canon	imageRUNNER 3225	13626
Ricoh	Aficio MP 161	845
Canon	imageRUNNER 3235	58252

**AFTER**

Manufacturer	Model	Pages
Canon	imageRUNNER 3225	8954
Canon	imageRUNNER 3235	2321
Canon	imageRUNNER 3225	13626
Canon	imageRUNNER 3235	58252
Hewlett-Packard	LaserJet 4250	72542
Hewlett-Packard	LaserJet 4250	86524
Hewlett-Packard	LaserJet 4000	3442
Ricoh	Aficio MP 2550SP	63428
Ricoh	Aficio MP 2550SP	24593
Ricoh	Aficio MP 161	845

2. Next, the report removes duplicate values in the specified field.

**BEFORE**

Manufacturer	Model	Pages
Canon	imageRUNNER 3225	8954
Canon	imageRUNNER 3235	2321
Canon	imageRUNNER 3225	13626
Canon	imageRUNNER 3235	58252
Hewlett-Packard	LaserJet 4250	72542
Hewlett-Packard	LaserJet 4250	86524
Hewlett-Packard	LaserJet 4000	3442
Ricoh	Aficio MP 2550SP	63428
Ricoh	Aficio MP 2550SP	24593
Ricoh	Aficio MP 161	845

**AFTER**

Manufacturer	Model	Pages
Canon	imageRUNNER 3225	8954
	imageRUNNER 3235	2321
	imageRUNNER 3225	13626
	imageRUNNER 3235	58252
Hewlett-Packard	LaserJet 4250	72542
	LaserJet 4250	86524
	LaserJet 4000	3442
Ricoh	Aficio MP 2550SP	63428
	Aficio MP 2550SP	24593
	Aficio MP 161	845

- Finally, the report creates headings from the remaining values and displays the non-nested fields indented below these headings.

#### BEFORE

Manufacturer	Model	Pages
Canon	imageRUNNER 3225	8954
	imageRUNNER 3235	2321
	imageRUNNER 3225	13626
	imageRUNNER 3235	58252
Hewlett-Packard	LaserJet 4250	72542
	LaserJet 4250	86524
	LaserJet 4000	3442
Ricoh	Aficio MP 2550SP	63428
	Aficio MP 2550SP	24593
	Aficio MP 161	845

#### AFTER

Manufacturer: Canon		
	Model	Pages
	imageRUNNER 3225	8954
	imageRUNNER 3235	2321
	imageRUNNER 3225	13626
	imageRUNNER 3235	58252
Manufacturer: Hewlett-Packard		
	Model	Pages
	LaserJet 4250	72542
	LaserJet 4250	86524
	LaserJet 4000	3442
Manufacturer: Ricoh		
	Model	Pages
	Aficio MP 2550SP	63428
	Aficio MP 2550SP	24593
	Aficio MP 161	845

If you want, you can apply nesting to as many as three fields in a report. For example, here is the same information with nesting applied to two fields (Manufacturer and Model).

<b>Manufacturer: Canon</b>	
<b>Model: imageRUNNER 3225</b>	
<b>Pages</b>	
8954	
13626	
<b>Model: imageRUNNER 3235</b>	
<b>Pages</b>	
2321	
58252	
<b>Manufacturer: Hewlett-Packard</b>	
<b>Model: LaserJet 4000</b>	
<b>Pages</b>	
3442	
<b>Model: LaserJet 4250</b>	
<b>Pages</b>	
86524	
72542	
<b>Manufacturer: Ricoh</b>	
<b>Model: Aficio MP 2550SP</b>	
<b>Pages</b>	
63428	
24593	
<b>Model: Aficio MP 161</b>	
<b>Pages</b>	
845	

The fields you apply nesting to must be the first fields listed in your report definition. If necessary you can reorder the fields in a definition by dragging them up or down in the **Fields** area of the **Create/Edit Report Definition** page. By default there is no nesting applied.

## Sorting

By default, PrintFleet sorts the report in ascending order using the first field you add to the report definition. When you make certain

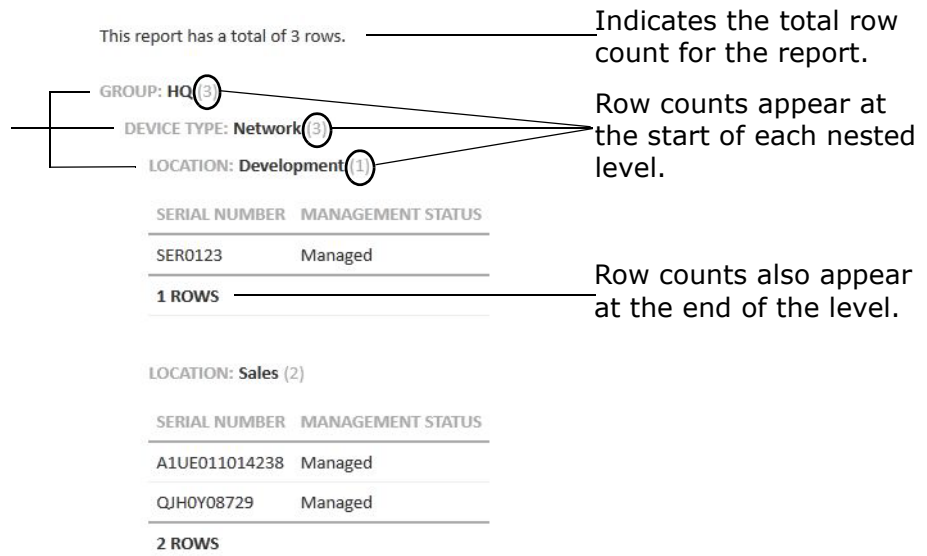


changes to the report definition, such as applying nesting or deleting fields, the field by which the report will be sorted may be automatically changed, so you should double-check how the sorting is set before you save your changes. If nesting is applied in your report definition, the report will be automatically sorted in ascending order by the nested fields. You can choose any non-nested field in your report definition to sort the report by (after any nesting has been done), and you can specify the sort direction.

## Row Counts

If you want, you can have PrintFleet display row counts in your report. The row counts appear at the top and bottom of each section of rows. If nesting is applied, row counts will appear for each level of nesting. If the report does not have any nesting applied, the only row counts displayed will be for the entire report.

This example show three levels of nesting. Each level is indented.



## Functions

By default, a report displays a separate row for each record, with the values from the individual records appearing in the corresponding columns in the report, as follows:

Group	Device	Life Count - Total
East	Canon LBP6650dn	24263
East	HP LJ Pro CM1415fnw	12561
East	KM bizhub C552DS	1244
East	Oki MPS480mb	51331
West	Kyocera FS-6025MFP	5621
West	Samsung CLX-3175	26626

If your report definition includes a meter or date-based field (such as Life Count - Total in this example), you have the option of changing the field to a function so that it aggregates the records (bundles together all the records that share the same values for the remaining fields) and displays just the aggregated function's value. For example, if you only wanted the sum of the totals for the groups from the previous table, and didn't need to see the individual devices you could use a function to create a report like the one below:

Group	Life Count - Total
East	89399
West	32247

**Available Functions.** For date-based fields, you can choose from MIN or MAX.

- MIN will display the earliest date from the results included in the report.
- MAX will display the latest date from the results included in the report.

For meter fields, you can choose from SUM, AVG, MIN, or MAX.

- SUM will display the sum of the results included in the report.
- AVG will display the average of the results included in the report.
- MIN will display the minimum value from the results included in the report.
- MAX will display the maximum value from the results included in the report.

If you want, you can include multiple functions in your report. For example, in a report on devices, you could include both the Life Count - Mono and Life-Count - Color meter fields, and set each of them to display the sum of the values for the aggregated devices.

**Example.** Imagine that you just want to report on the total number of pages printed by your network and local devices. One way to do that is to display one row for each device and include a SUM summary of the Life Count Total Current Value at the bottom of the

report (see “Summaries” on page 46).

DEVICE TYPE: **Local**

DEVICE NAME	TOTAL LIFE COUNT CURRENT VALUE
C710	98
HP Color LaserJet 2605dn	392
HP LaserJet 1020	3135
Lexmark X543 XL	1
SUM	3626

DEVICE TYPE: **Network**

DEVICE NAME	TOTAL LIFE COUNT CURRENT VALUE
B431	7
Canon iR-ADV C2020 30.06	756
HP Color LaserJet 2605dn	392
HP Color LaserJet CP2025dn	315
SUM	1470

That would be a reasonable solution if you wanted to see the individual page totals for every device, but if you have hundreds of devices then it becomes quite a lengthy report for just the one small piece of information you’re interested in. If you don’t care about the individual devices, you can simply remove the Device Name field from your report definition and change the Life Count Total Current Value field to a SUM function. The corresponding report would now look like this:

DEVICE TYPE	TOTAL LIFE COUNT CURRENT VALUE
Network	1470
Local	3626

**Limitations.** Using functions can obviously produce a much more concise report, but there are some limitations to be aware of:

- If you need to include in your report a field for which there is a high degree of variability among the values for each record (such as Device Name), or possibly even unique values (such as MAC address), then PrintFleet will not be able to effectively aggregate the rows, and you will end up with lots of rows, most of which are only aggregating one or two records.
- Similarly, each field you add to your report will at least double the number of different combinations of fields, which in turn reduces the number of values that can be aggregated together,

to the point where the aggregation can quickly become ineffective.

Putting it another way, when using functions, the fewer fields you include in the report, and the fewer unique values there are among those fields, the more effective the aggregation function will be.

## Record Counts

By default, when you create a report definition, there will be one row in the report output for each record you are reporting on (device or Printer DCA). However, if you include a function in the report (see "Functions" on page 42), the rows in the report are automatically aggregated. For example, consider the following report showing the total number of mono and color pages for each group.

### Page Totals by Group

The total number of mono and color pages per group

GROUP BREADCRUMB	MONO LIFE COUNT CURRENT VALUE	COLOR LIFE COUNT CURRENT VALUE
Root Group > ACME Printing	99879	73050
Root Group > ACME Printing > East	0	1
Root Group > ACME Printing > East > Development	127	972
Root Group > ACME Printing > East > Sales	702	159
Root Group > ACME Printing > West	4569	874
Root Group > ACME Printing > West > HQ	324778	21971
Root Group > ACME Printing > West > Manufacturing	77559	6694
SUM	507614	103721

In such a report you can't tell how many records (in this case printers) each row represents. If it is important to know how many records are represented in each row of a report that includes a function, you can add a special field called **Record Count** to your report.

### Page Totals by Group

The total number of mono and color pages per group

GROUP BREADCRUMB	MONO LIFE COUNT CURRENT VALUE	COLOR LIFE COUNT CURRENT VALUE	RECORD COUNT
Root Group > ACME Printing	99879	73050	27
Root Group > ACME Printing > East	0	1	2
Root Group > ACME Printing > East > Development	127	972	3
Root Group > ACME Printing > East > Sales	702	159	3
Root Group > ACME Printing > West	4569	874	2
Root Group > ACME Printing > West > HQ	324778	21971	3
Root Group > ACME Printing > West > Manufacturing	77559	6694	4
SUM	507614	103721	

With the addition of the Record Count field, you can now tell how many printers contributed to the aggregated page totals for each group.

## Summaries

When you include a meter or date-based field in a report, you have the option of including a summary for that field at the bottom of the report.

### Page Totals by Group

The total number of mono and color pages per group

GROUP BREADCRUMB	MONO LIFE COUNT CURRENT VALUE	COLOR LIFE COUNT CURRENT VALUE	RECORD COUNT
Root Group > ACME Printing	99879	73050	27
Root Group > ACME Printing > East	0	1	2
Root Group > ACME Printing > East > Development	127	972	3
Root Group > ACME Printing > East > Sales	702	159	3
Root Group > ACME Printing > West	4569	874	2
Root Group > ACME Printing > West > HQ	324778	21971	3
Root Group > ACME Printing > West > Manufacturing	77559	6694	4
SUM	507614	103721	
AVG	72516.3	14817.3	
MIN	0	1	
MAX	324778	73050	

For date-based fields, you can choose from MIN or MAX.

- MIN will display the earliest date from the results included in the report.
- MAX will display the latest date from the results included in the report.

For meter fields, you can choose from SUM, AVG, MIN, or MAX.

- SUM will display the sum of the results included in the report.
- AVG will display the average of the results included in the report.
- MIN will display the minimum value from the results included in the report.
- MAX will display the maximum value from the results included in the report.

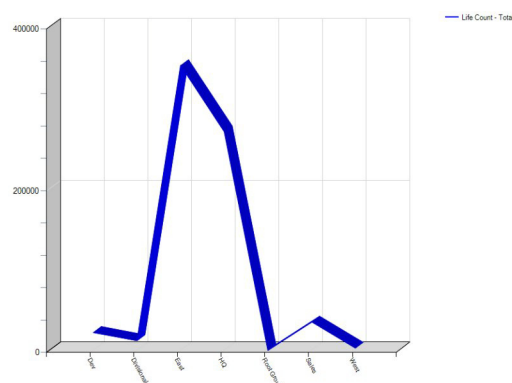
You can select as many of the optional summaries as you want to display in the report. If there are multiple meter or date-based fields in the report, you can also choose which summaries to display for which field. For example, in a report on devices, you could display the **MIN** summary for the **First Seen** field and the **MAX** summary for the **Last Active** field.

If the report has nesting applied, note that the summary only applies to the last level of nesting. You will not get a summary of any fields nested at a higher level, nor will you get a summary of the entire report.

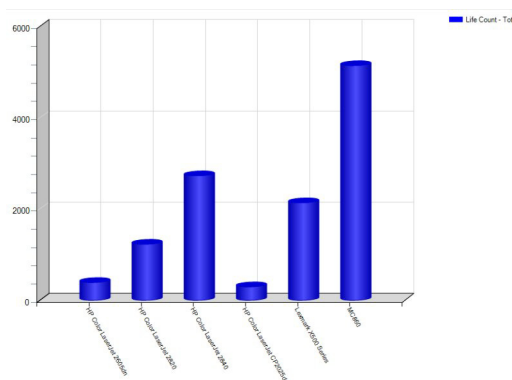
## Charts

Often a chart can be more effective than a table as a way of conveying information. Charts also help make a report look professional. You can add the following types of charts to your reports:

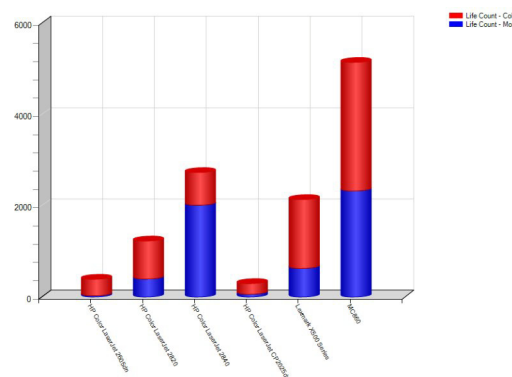
**Line.** A line chart is good for showing trends.



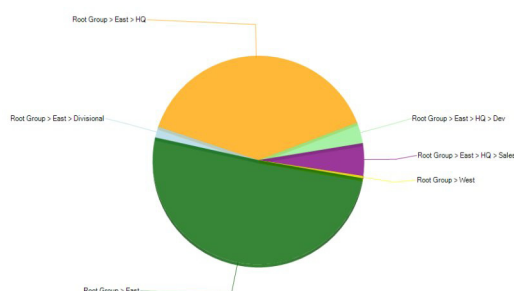
**Bar.** A bar chart is good way to compare different values. For example, you might want to compare the total number of pages printed by the devices in a group.



**Stacked Bar.** A stacked bar chart is effective when there are multiple values that contribute to a total, and you want to compare the totals. For example, you might show the total pages printed by color-capable devices as a combination of mono and color pages.



**Pie.** A pie chart is a good way to show the relative amount each component contributes to a total. For example, you might show how many pages are printed by each group.



Only numeric fields are available to be used in the **Vertical Axis**. Also, in standard report definitions all **Vertical Axis** fields must be of the same unit (Record Count, Page Count, Percent, PPM, or Yield).

### 3.3 Creating report definitions

To be able to create a report definition you must belong to a role to which the **Report Management** permission has been assigned. If you do not have this permission the **Create Report Definition** option will be unavailable.

#### Creating a Standard report definition

PrintFleet Optimizer allows you to generate a variety of Standard reports.

##### To create a Standard report:

1. From the main menu, click **Reports**.
2. From the **Reports** page, click **Create Report Definition**. The **Create/Edit Report Definition** page appears.
3. In the **Definition Setup** area, do the following:
  - In the **Name** box, enter a name for the report.
  - In the **Description** box, enter a description for the report.
  - From the **Report Type** drop-down list, select **Standard**.
4. In the **Report Output Template** area, do the following:
  - In the **Title** box, enter the title you want to appear at the top of the report.
  - In the **Subtitle** box, enter a subtitle for the report.

- In the **Comment** box, enter any additional text that you would like to appear in the report below the title and subtitle.

**Note**

If you want you can include variables in report titles, subtitles, and comments. For more information, see "Using Variables in Titles, Subtitles, and Comments" on page 54.

5. In the **Dataset** area, from the **Dataset** drop-down list, select from one of the following categories of data to base the report on:
  - DCA
  - Device
6. In the **Fields** area, do the following:
  - Click **Add Field**. A new text box will appear. By default, the text box displays the name of the field selected below the text box.
  - Below the new text box, click the name of the field to select a different field. A popup dialog opens.
  - In the popup dialog, under **Field Type**, click the type of field you want to use in the report. The **Field** list changes to reflect your selection.
  - If the **Field Type** you selected is *Meters Custom*, a **Meter Label** box appears. By default, the **Meter Label** box is automatically set to the *LIFECOUNT* meter. If you want to use a different meter, type the name of the meter you want to use in the **Meter Label** box.

**Note**

If necessary you can find the names of the meters available for a given device by opening the **Meters** tab of the **Device Detail** page for that device.

- From the **Field** list, click the field you want to add. The text box automatically displays the name of the selected field. If you want different text to appear for that field in the report, simply edit the field name in the text box.

**Note**

When running the report PrintFleet automatically converts all field name text to uppercase column headings.

- Depending on the field you select, a **Function** option may appear below the text box for the field. By default the function is set to None. If you want, you can specify a different function by clicking the selected function. The available functions include SUM, AVG, MIN, and MAX, although only some of these may be available for a given field. See "Functions" on page 42.



- Repeat these steps for each additional field you want to add to the report. To delete a field you have added, click **Delete** below the text box for that field.
- For a tabular report, the fields will appear in the order in which they are listed in the report definition. To change the relative position of fields, click and hold the handle to the left of the text box and drag the field up or down in the list of fields.

**Note**

If you include the **Device String** field in a report, keep in mind that the information that appears for this field is determined by the **Device Name Template** setting in your preferences.

- In the **Formatting** area, do the following:
  - Use the **Nest rows by the first <#> fields** option to specify the number of levels of nesting in the report. By default the nesting level is set to 0, meaning there will be no nesting and all rows will display all fields. You can have up to 3 levels of nesting in a report. See "Nesting" on page 38.
  - Use the **Sort rows by <field> in <direction> order** option to specify how the report will be sorted. If you have specified a nesting level greater than 0 for the report, the sorting will be applied after the nesting. See "Sorting" on page 41.
  - Select the **Show row counts** check box if you want row counts to be displayed in the report. See "Row Counts" on page 42.
- In the **Summaries** area, for each field listed, do the following:
  - Select the **SUM** check box if you want a sum of the field's values displayed in the report.
  - Select the **AVG** check box if you want an average of the field's values displayed in the report.
  - Select the **MIN** check box if you want the minimum value of the field displayed in the report.
  - Select the **MAX** check box if you want the maximum value of the field displayed in the report.

For more information on Summaries, see "Summaries" on page 46.
- In the **Charting** area, if you want the report to display a chart, do the following:
  - From the **Chart Type** drop-down list, select the type of chart you want to add (Line, Bar, Stacked Bar, or Pie).
  - From the **Horizontal Axis** drop-down list, choose the field you want to use as the horizontal axis for the report.
  - From the **Vertical Axis** drop-down list, choose a numeric field you want to use as the vertical axis for the report. When you choose one vertical axis field, another drop-down list will automatically appear to allow you to choose an

additional field. You can specify multiple fields for the vertical axis when using a Bar, Stacked Bar, or Line chart type.

<b>Note</b>	If you do not specify fields to use for both the horizontal and vertical axis, you will get an error when you run the report definition.
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For more information on charts, see "Charts" on page 46.

10. Click **Save** at the bottom of the page to save the report definition and proceed automatically to the **Report Parameters** page.

## Creating a SQL report definition

PrintFleet Optimizer allows you to generate a variety of SQL reports by querying the Node and Master databases. The Node database(s) contain only device metrics: lists of attribute/meter/supply labels and metadata, as well as all the collected data points. The Master database contains everything else: the devices, groups, users, and so forth. The **Master SQL Query** is used to join the results of the **Node SQL Query** (if specified) with specific data stored in the Master database.

If you want to filter the information in a SQL report by date, you can do so by including date variables. For more information, see "Working with Date Variables" on page 61.

You must be assigned the Admin role in the Root group to be able to create, copy or edit SQL reports.

### To create a SQL report:

1. From the main menu, click **Reports**.
2. From the **Reports** page, click **Create Report Definition**. The **Create/Edit Report Definition** page appears.
3. In the **Definition Setup** area, do the following:
  - In the **Name** box, enter a name for the report.
  - In the **Description** box, enter a description for the report.
  - From the **Report Type** drop-down list, select **SQL**.
4. In the **Report Output Template** area, do the following:
  - In the **Title** box, enter the title you want to appear at the top of the report.
  - In the **Subtitle** box, enter a subtitle for the report.
  - In the **Comment** box, enter any additional text that you would like to appear in the report below the title and subtitle.

<b>Note</b>	If you want you can include variables in report titles, subtitles, and comments. For more information, see "Using Variables in Titles, Subtitles, and Comments" on page 54.
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5. In the **Node SQL Query** area, do the following:
  - Type or paste the SQL you want to use into the text box.
  - To insert a PrintFleet variable into the SQL block at the current cursor position, click the **Insert Variable** drop-down list and choose the variable you want to use from the list.
6. In the **Master SQL Query** area, do the following:
  - Type or paste the SQL you want to use into the text box.
  - To insert a PrintFleet variable into the SQL block at the current cursor position, click the **Insert Variable** drop-down list and choose the variable you want to use from the list.
7. In the **Charting** area, if you want the report to display a chart, do the following:
  - From the **Chart Type** drop-down list, select the type of chart you want to add (Line, Bar, Stacked Bar, or Pie).
  - In the **Horizontal Axis** box, enter the field you want to use as the horizontal axis for the report. The field name must be typed in exactly as it is named in the Master SQL Query.
  - In the **Vertical Axis** box, enter the name of the numeric field you want to use as the vertical axis for the report. If you are using a Bar, Stacked Bar, or Line chart type, you can enter multiple fields, each separated by a comma. Each field name must be typed in exactly as it is named in the Master SQL Query.

**Note**

If you do not specify the fields to use for the horizontal or vertical axis, the horizontal axis will be the first column returned by the Master SQL Query, and the vertical series will be all columns after the first.

8. Click **Save** at the bottom of the page to save the report definition and proceed automatically to the **Report Parameters** page.

## Creating an Executive report definition

PrintFleet Optimizer allows you to combine multiple standard and SQL reports into a single Executive report. An Executive report can have cover pages which can include custom graphics, allowing you to apply your corporate logo.

**Note**

If you create an Executive report that includes multiple SQL reports which use date variables, be aware that you will only be able to specify one start date and one end date for the Executive report. For more information, see "Working with Date Variables" on page 61.

### To create an Executive report:

1. From the main menu, click **Reports**.
2. From the **Reports** page, click **Create Report Definition**. The **Create/Edit Report Definition** page appears.

3. In the **Definition Setup** area, do the following:
  - In the **Name** box, enter a name for the report.
  - In the **Description** box, enter a description for the report.
  - From the **Report Type** drop-down list, select **Executive**.
4. In the **Report Output Template** area, do the following:
  - In the **Title** box, enter the title you want to appear at the top of the report.
  - In the **Subtitle** box, enter a subtitle for the report.
  - In the **Comment** box, enter any additional text that you would like to appear in the report below the title and subtitle.

<b>Note</b>	If you want you can include variables in report titles, subtitles, and comments. For more information, see "Using Variables in Titles, Subtitles, and Comments" on page 54.
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5. In the **Cover Page Options** area, use the **Front Cover** and **Back Cover** lists to determine whether you want cover pages included and if so what to display on them, as follows:
  - **Do not include**—Choose this option if you do not want a cover page included in the report.
  - **Include with branding**—Choose this option if you want a cover page included in the report, and you want the cover page to display a custom image. For information on changing the image that appears, see "Customizing the Executive Report cover" on page 128.
  - **Include without branding**—Choose this option if you want the associated cover page included in the report, but you only want it to display the title, subtitle, and comment specified in the executive report definition.

<b>Note</b>	This option is not available for the back cover.
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6. For each report you want to include in your Executive report, in the **Include Report Definitions** area, click in the drop-down list and select the standard or SQL report to include.

<b>Note</b>	The order in which the reports are listed in the definition is the order in which they will appear in the report. If you want, you can click and drag the report definitions to change their relative positions.
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7. Click **Save** at the bottom of the page to save the report definition and proceed automatically to the **Report Parameters** page.

## Using Variables in Titles, Subtitles, and Comments

If you want you can use variables in the title, subtitle, or comment in a report. Variables act as placeholders for certain properties that can be evaluated and inserted at the time a report is run. By adding a variable to a report definition you can run the same report in different circumstances and be able to easily identify those circumstances from the value of the variable. For example, you could include variables that identify the group the report is run against, the date the report was run, or the user who ran the report. The complete list of supported variables is as follows:

**Table 6: Supported Report Variables**

Variable	Description
\$pfCurrentUserName	Displays the name of the user running the report (or the person who scheduled the report to be run).
\$pfGroupName	Displays the name of the group the report is run against.
\$pfGroupBreadcrumb	Displays the full path of the group the report is run against.
\$pfStartDate	For reports that require a date range, displays the start date of the specified range.
\$pfStartTime	For reports that require a date range, displays the start time of the specified range.
\$pfEndDate	For reports that require a date range, displays the end date of the specified range.
\$pfEndTime	For reports that require a date range, displays the end time of the specified range.
\$pfDate	Displays the date the report is run.
\$pfTime	Displays the time the report is run.

### To add a variable to a report title, subtitle, or comment:

1. From the **Create/Edit Report Definition** page, under **Report Output Template**, click in the **Title**, **Subtitle**, or **Comment** fields at the point where you want the variable to appear.
2. Type the variable you want to use. The variable can be used along with regular text. For example, if you wanted the report to display the group name, you might type something like the following:

*Devices in group \$pfGroupName*

## 3.4 Specifying report parameters

A report definition specifies the structure of a report. The actual data used to populate the report, such as the group the report is run against, is determined by your selection on the Report Parameters page.

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**Note**

The **Report Parameters** page opens automatically when you save changes to a report definition. You can also access the page by clicking **Run** from the **Reports** page.

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The **Report Parameters** page is also used to specify who can access the report. The **Access** field in the **Definition Summary** area describes the current access settings for the report. By default, each report you create is private; no other users are able to see, edit, or use the report (the one exception to this would be a user with the **Admin** role in the root group, who by necessity must be able to manage any user-created report definition). If you want to share the report with other users you must change the access settings from this page. For more information, see “Report Security” on page 68.

An executive report has its own security settings that supercede the security settings for the individual reports it includes. For example, one user might create a standard report and set the security to be shared with members of his own group only. Another user with whom that report has been shared can then create an executive report which includes the shared report, and share the executive report with a completely different group.

### To change the access settings for a report definition:

1. From the **Report Parameters** page, under **Definition Summary**, click **Share with Group**. The **Report Definition Access** dialog opens.
2. In the **Report Definition Access** dialog, select one of the following:
  - **Private**
  - **Share for Full Access (Run & Manage) with Group**
3. If you selected **Share for Full Access (Run & Manage) with Group**, do the following:
  - Click the drop-down arrow in the combo box and use the control to select the group with which you want to share the report definition.
  - Choose the **All Roles** option if you want all roles to be able to access the report definition, or choose the **Restrict to**

**Specific Roles** option if you want to select specific roles within the specified group.

**Note**

If you choose the **All Roles** option:

- All users assigned to the specified group, as well as all users assigned to all groups both above and below the specified group, will be able to run and schedule the shared report definition.
- All users who have the **Report Management** permission, and who are assigned to the specified group (or to a higher group), will be able to edit and delete the shared report definition.

If you choose the **Restrict to Specific Roles** option:

- All users assigned to the specified role, and who are assigned to either the specified group or to any group above or below the specified group, will be able to run and schedule the shared report definition.
- All users assigned to the specified role, and who are assigned to either the specified group or a higher group, and who have the **Report Management** permission, will be able to edit and delete the shared report definition.

- If you selected the **Restrict to Specific Roles** option, a list of roles appears. Select the check box for each role you want to be able to access the report definition.

4. Click **Save Access Settings** to save your changes.

**To run a report definition:**

1. On the **Run Now** tab of the **Report Parameters** page, in the **Report Parameters** area, specify any required parameters for the report definition.

**Note**

If you are running a SQL report (or an Executive report that includes a SQL report), and the SQL query in the SQL report definition includes date variables, you will be prompted at run time to specify the required date parameters for the report. For more information, see "Specifying Date Parameters When Running a Report" on page 62.

2. Click **Run Report**. The report appears in the Report Viewer. For more information, see "Viewing Reports".

## 3.5 Viewing and saving reports

The **Report Viewer** displays the output of a report. From the **Report Viewer** you can also:

- Click to return to the **Report Parameters** page where you can change the report parameters and rerun the report definition.
- Save the report output to a file in CSV (Comma-separated values in a text file), TAB (Tab-separated values in a text file), or PDF (Adobe Portable Document Format) format.

<b>Note</b>	For an executive report only the PDF option is available.
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### To save a report in Adobe Portable Document Format:

- After generating a report, in the **Report Viewer**, click **Save As**, and then click **PDF**.

### To save a report in tab-separated values format:

- After generating a report, in the **Report Viewer**, click **Save As**, and then click **TAB**.

### To save a report in comma-separated values format:

- After generating a report, in the **Report Viewer**, click **Save As**, and then click **CSV**.

## 3.6 Scheduling reports

For reports that you want to run at specified times or at regular intervals you can create a schedule. When the indicated time arrives PrintFleet will automatically run the report and email the results to a specified user. For standard or SQL reports you can specify whether to create the report in PDF or CSV format.

### To schedule a report:

1. From the main menu, click **Reports**. The **Reports** page opens.
2. From the **Reports** page, under **Options**, click **Schedules** beside the report definition you want to schedule. The **Report Parameters** page opens.
3. From the **Report Parameters** page, click **Create Schedule**. A **Create Schedule** tab appears.
4. In the **Schedule Details** area, in the **Name** box, type a name for the schedule. The name is used to identify the schedule in PrintFleet Optimizer. The name will also appear as part of the subject heading in the email that is sent by PrintFleet to the specified recipient(s). The schedule name does not appear within the report itself.
5. In the **Email Recipients** box, type the email address of the person who should receive the report. If you want to have the



report sent to multiple people, enter as many addresses as necessary, separating them with spaces, commas, or semicolons.

6. If you are scheduling a standard or SQL report, from the **Report Format** list, select the file format (PDF or CSV) in which you want to receive the report.
7. Beside **Schedule**, choose the most appropriate interval for the schedule, specifying the details as follows:
  - **Once**—Specify the date on which to run the report definition.
  - **Daily**—Specify the interval in days, and the date from which the schedule should start.
  - **Weekly**—Specify the interval in weeks, the day of the week, and the date from which the schedule should start.
  - **Monthly**—Specify which day of the month, the interval in months, and the date from which the schedule should start.
  - **Advanced**—Specify which week of the month, which day of the week, the interval in months, and the date from which the schedule should start.
8. In the **Report Parameters** area, specify any required parameters for the report. These may include any of the following:
  - **Group**—Click the drop-down arrow to choose the group against which to run the report.
  - **Reporting Period**—Click the drop-down arrow and choose the reporting period. Note that the reporting period is relative to the date on which the report is scheduled to run. For example, if you scheduled the report to be run once at 5:00 PM on October 15, and you set the reporting period to be **7 Days**, the report would cover the period from 5:00 PM October 8 to 5:00 PM October 15. For more information, see “Specifying Date Parameters When Scheduling a Report” on page 65.
9. Click **Save Schedule**. The new schedule appears on the **Schedules** tab of the **Report Parameters** page.

## 3.7 Managing report definitions

As you create and refine your report definitions you will likely find it convenient to be able to perform various management activities, such as locating, editing, copying, and deleting report definitions.

When viewing the report definitions on the **Definitions** tab of the **Reports** page, note that you can click any column heading to sort the definitions by that column. This may help you to locate a particular definition if you have many report definitions.

To be able to copy, edit or delete report definitions you must belong to a role to which the **Report Management** permission has been assigned.

**Note**

You can not edit or delete the sample reports that have been created by PrintFleet, regardless of what permissions you have been granted.

Also, you must be assigned to the Admin role in the Root group to be able to edit or copy SQL report definitions.

**To edit a report definition:**

1. On the main menu, click **Reports**. The **Reports** page opens.
2. On the **Reports** page, under **Options**, click **Edit** beside the report definition you want to edit. The **Create/Edit Report Definition** page appears.
3. Make the desired changes to the report.
4. Click **Save** to save your changes.

**To copy a report definition:**

1. On the main menu, click **Reports**. The **Reports** page opens.
2. On the **Reports** page, under **Options**, click **Copy** beside the report definition you want to copy. The **Create/Edit Report Definition** page appears.
3. On the **Create/Edit Report Definition** page, under **Definition Setup**, provide a new name for the report definition in the **Name** box.
4. Make any other changes to the report definition.
5. Click **Save** to save your changes.

**To delete a report definition:**

1. On the main menu, click **Reports**. The **Reports** page opens.
2. On the **Reports** page, under **Options**, click **Delete** beside the report definition you want to delete. A **Delete Confirmation** dialog appears.
3. Click **Continue** to verify that you want to delete the report definition.

## 3.8 Managing report schedules

As you create and refine your report schedules you will likely find it convenient to be able to locate, edit, and delete report schedules.

There are two pages from which you can view and manage schedules. Which one you should use depends on whether you are managing schedules for multiple report definitions, or just for one report definition.

## Managing schedules for a specific definition

If you are only interested in the schedules for a particular report definition, you will likely want to open the **Schedules** tab from the **Report Parameters** page for that report definition. Only the schedules associated with that report definition will appear.

### To view the schedules for a specific report definition:

1. On the main menu, click **Reports**. The **Reports** page opens.
2. On the **Definitions** tab of the **Reports** page, under **Options**, click **Schedules** beside the report definition for which you want to view the schedules. The **Schedules** tab opens in the **Report Parameters** page.
3. The schedules for the specified report definition are displayed in the table. If necessary, you can:
  - scroll down to view additional schedules on the page
  - change the number of schedules that can be displayed on the page
  - view other pages of schedules for the definition
  - sort the schedules for the definition by clicking any column heading

### To edit a schedule for a report definition:

1. On the **Schedules** tab of the **Report Parameters** page, under **Options**, click **Edit** beside the schedule you want to edit. The **Edit Schedule** tab opens.
2. Make the necessary changes to the schedule. See "Scheduling reports" on page 57.
3. Click **Save Schedule**.

### To delete a schedule for a report definition:

1. On the **Schedules** tab of the **Report Parameters** page, under **Options**, click **Delete** beside the schedule you want to delete. A **Delete Confirmation** dialog opens.
2. Click **Continue**.

## Managing schedules for multiple definitions

If you are managing schedules for multiple report definitions, it might be helpful to see a list of all the schedules you have access to at one time.

### To view the report schedules to which you have access:

1. On the main menu, click **Reports**. The **Reports** page opens.
2. On the **Reports** page, click the **Schedules** tab.

3. On the **Schedules** tab, under **Group Selection**, use the drop-down list to select the group for which you want to view the report schedules.

**Note**

To see all of the report schedules to which you have access, select the highest group available from the group list. To see just the report schedules to which you have access in a subgroup, choose the subgroup from the group list.

4. The schedules associated with the selected group are displayed in the table. If necessary, you can:
  - scroll down to view additional schedules on the page
  - change the number of schedules that can be displayed on the page
  - view other pages of schedules for the group
  - sort the schedules for the group by clicking any column heading
  - select a different group

**To edit a report schedule:**

1. On the **Schedules** tab of the **Reports** page, under **Options**, click **Edit** beside the schedule you want to edit. The **Edit Schedule** tab opens.
2. Make the necessary changes to the schedule. See "Scheduling reports" on page 57.
3. Click **Save Schedule**.

**To delete a report schedule:**

1. On the **Schedules** tab of the **Reports** page, under **Options**, click **Delete** in the row of the report schedule that you want to delete.
2. Click **Continue** to verify deletion of the schedule.

## 3.9 Working with Date Variables

Some reports (such as Model Counts, or Hidden Devices) are not date sensitive. For example, with the Model Counts report, you are only interested in how many of each model exist in a group, not how many existed over a specified period. For other reports (such as Volumes by Manufacturer), you will want to be able to determine how many pages were printed over a specified period. This section of the guide will describe how to add date variables to reports you create, and how to provide the corresponding date parameters when running and scheduling reports.

### Adding Date Variables in a SQL Report

When creating a SQL report, if you want to filter the information by date, or include a date in a report, you can do so using date variables.

In the **Node SQL Query** area or the **Master SQL Query** area, click the **Insert Variable** drop-down list. In the list of supported variables that appears, there is a **Date Variables** section. The date variables represent three ways to specify dates:

- the start of a date range  
Use the date variables which begin with '\$pfStart' if you only want to include data after a specified date/time. When a report that includes one or more start variables is run or scheduled, a start date/time must be provided.
- the end of a date range  
Use the date variables which begin with '\$pfEnd' if you only want to include data before a specified date/time. When a report that includes one or more end variables is run or scheduled, an end date/time must be provided.
- the current date  
Use the date variables which do not begin with either '\$pfStart' or '\$pfEnd' if you want to use the current date/time when the report runs. The system will automatically provide the corresponding date/time value.

The available date variables are listed in the following table:

**Table 7: Date Variables**

Start	End	Current
\$pfStartDate	\$pfEndDate	\$pfDate
\$pfStartDay	\$pfEndDay	\$pfDay
\$pfStartMonth	\$pfEndMonth	\$pfMonth
\$pfStartYear	\$pfEndYear	\$pfYear
\$pfStartTime	\$pfEndTime	\$pfTime

### Specifying Date Parameters When Running a Report

When running a SQL report that includes start or end date variables, you will be prompted to specify date parameters for the report. The options available will vary depending on whether the report requires a start date, an end date, or both.

For SQL reports that require a start date, the available **Start Date** choices are as follows:

- **24 hours ago**—The reporting period will cover the 24 hours immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to be **24 hours ago**, the report will cover the period from 5:00 PM October 14 to 5:00 PM October 15.
- **7 days ago**—The reporting period will cover the 7 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to

be **7 days ago**, the report will cover the period from 5:00 PM October 8 to 5:00 PM October 15.

- **30 days ago**—The reporting period will cover the 30 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to be **30 days ago**, the report will cover the period from 5:00 PM September 15 to 5:00 PM October 15.
- **90 days ago**—The reporting period will cover the 90 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to be **90 days ago**, the report will cover the period from 5:00 PM July 17 to 5:00 PM October 15.
- **Start of month**—The reporting period will cover the time from the start of the calendar month in which the report is run. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to be **Start of month**, the report will cover the period from 00:00 AM October 1 to 5:00 PM October 15.
- **Start of last month**—The reporting period will cover the time from the start of the calendar month preceding the calendar month in which the report is run. If you run the report at 5:00 PM on October 15, and you set the **Start Date** to be **Start of last month**, the report will cover the period from 00:00 AM September 1 to 5:00 PM October 15.
- **Advanced**—If none of the provided options meet your requirements, select this option and then specify the date and time you want to use for the report.

For SQL reports that just require an end date, the available **End Date** choices are as follows:

- **Now**—The reporting period will cover the time up to the point the report runs. If you run the report at 5:00 PM on October 15, and you set the **End Date** to be **Now**, the report will cover the period up to 5:00 PM October 15.
- **End of last month**—The reporting period will cover the time up to the end of the previous calendar month from which the report is run. If you run the report at 5:00 PM on October 15, and you set the **End Date** to be **End of last month**, the report will cover the period up to 00:00 AM October 1.
- **Advanced**—If none of the provided options meet your requirements, select this option and then specify the date and time you want to use for the report.

For SQL reports that require both a start date and an end date, the available **Reporting Period** choices are as follows:

- **Last 24 hours**—The reporting period will cover the 24 hours immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Reporting**

**Period** to be **Last 24 hours**, the report will cover the period from 5:00 PM October 14 to 5:00 PM October 15.

- **Last 7 days**—The reporting period will cover the 7 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Reporting Period** to be **Last 7 days**, the report will cover the period from 5:00 PM October 8 to 5:00 PM October 15.
- **Last 30 days**—The reporting period will cover the 30 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Reporting Period** to be **Last 30 days**, the report will cover the period from 5:00 PM September 15 to 5:00 PM October 15.
- **Last 90 days**—The reporting period will cover the 90 days immediately preceding the time the report runs. If you run the report at 5:00 PM on October 15, and you set the **Reporting Period** to be **90 Days**, the report will cover the period from 5:00 PM July 17 to 5:00 PM October 15.
- **This month**—The reporting period will cover the time from the start of the calendar month in which the report is run. If you run the report at 5:00 PM on October 15, and you set the **Reporting Period** to be **This Month**, the report will cover the period from 00:00 AM October 1 to 5:00 PM October 15.
- **Last month**—The reporting period will cover the time from the start of the calendar month preceding the calendar month in which the report is run. If you run the report at 5:00 PM on October 15, and you set the **Reporting Period** to be **Last month**, the report will cover the period from 00:00 AM September 1 to 00:00 AM October 1.
- **Advanced**—If none of the provided options meet your requirements, select this option and then specify the dates and times you want to use for the report.
  - **Start date**—Specify the date and time you want to use for the start date for the report.
  - **End date**—Specify the date and time you want to use for the end date for the report.

**Running an Executive Report.** When you are running an executive report that includes one or more SQL reports with date variables, be aware that the date requirements for the individual reports are amalgamated and presented as though it was a single report. Specifically:

- if one or more individual SQL reports require a start date, the executive report will prompt you to enter one start date. The start date you enter will be used for all of the individual SQL reports that require a start date.
- if one or more individual SQL reports require an end date, the executive report will prompt you to enter one end date. The end date you enter will be used for all of the individual SQL reports that require an end date.
- if both a start and an end date are required by the combined individual SQL reports, the executive report will prompt you for

a date range. The start of the range you enter will be used for all start dates required in the individual SQL reports, and the end of the range you enter will be used for all end dates required in the individual SQL reports. Note that the start of the date range has no effect on individual reports that require just an end date, and the end of the date range has no effect on individual reports that require just a start date.

### Specifying Date Parameters When Scheduling a Report

When scheduling a SQL report that includes start or end date variables, you will be prompted to specify a reporting period—the dates covered by the report. The reporting period is relative to when the report is scheduled to run. Also, the options available in the **Reporting Period** list will vary depending on whether the report requires a start date, an end date, or both.

For SQL reports that just require a start date, the available choices are as follows:

- **24 hours**—The reporting period will cover the 24 hours immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **24 hours**, the report will cover the period from 5:00 PM October 14 to 5:00 PM October 15.
- **7 days**—The reporting period will cover the 7 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **7 days**, the report will cover the period from 5:00 PM October 8 to 5:00 PM October 15.
- **30 days**—The reporting period will cover the 30 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **30 days**, the report will cover the period from 5:00 PM September 15 to 5:00 PM October 15.
- **90 days**—The reporting period will cover the 90 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **90 days**, the report will cover the period from 5:00 PM July 17 to 5:00 PM October 15.
- **Calendar month**—The reporting period will cover the time from the start of the month in which the schedule is run. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Calendar month**, the report will cover the period from 00:00 AM October 1 to 5:00 PM October 15.
- **Previous calendar month**—The reporting period will cover the time from the start of the calendar month preceding the calendar month in which the schedule is run. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Previous calendar month**, the report will cover the period from 00:00 AM September 1 to 00:00 AM October 1.
- **Advanced**—If none of the provided options meet your requirements, select this option and use the **Start Date** options



to specify the number of days (or months) before (or after) one of the following:

- **Report run time**—Determine the start of the reporting period relative to the date the report is scheduled to run.
- **Month Start**—Specify the start of the reporting period as an offset from the start of the calendar month in which the report is scheduled to be run.
- **Month End**—Specify the start of the reporting period as an offset from the end of the calendar month in which the report is scheduled to be run.

For SQL reports that just require an end date, the available choices are as follows:

- **Report run time**—The reporting period will end at the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Report run time**, the report will cover the period up until 5:00 PM October 15.
- **Previous calendar month**—The reporting period will cover the time up until the end of the calendar month preceding the calendar month in which the schedule is run. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Previous calendar month**, the report will cover the period up until 00:00 AM October 1.
- **Advanced**—If none of the provided options meet your requirements, select this option and use the **End Date** options to specify the number of days (or months) before (or after) one of the following:
  - **Report Run Time**—Determine the end of the reporting period relative to the date the report is scheduled to run.
  - **Month Start**—Specify the end of the reporting period as an offset from the start of the calendar month in which the report is run.
  - **Month End**—Specify the end of the reporting period as an offset from the end of the calendar month in which the report is run.

For SQL reports that require both a start date and an end date, the available choices are as follows:

- **24 hours**—The reporting period will cover the 24 hours immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **24 hours**, the report will cover the period from 5:00 PM October 14 to 5:00 PM October 15.
- **7 days**—The reporting period will cover the 7 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the

**Reporting Period** to be **7 days**, the report will cover the period from 5:00 PM October 8 to 5:00 PM October 15.

- **30 days**—The reporting period will cover the 30 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **30 days**, the report will cover the period from 5:00 PM September 15 to 5:00 PM October 15.
- **90 days**—The reporting period will cover the 90 days immediately preceding the time the report runs. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **90 days**, the report will cover the period from 5:00 PM July 17 to 5:00 PM October 15.
- **Calendar month**—The reporting period will cover the calendar month in which the schedule is run. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Calendar month**, the report will cover the period from 00:00 AM October 1 to 5:00 PM October 15.
- **Previous calendar month**—The reporting period will cover the calendar month preceding the calendar month in which the schedule is run. If you schedule the report to be run once at 5:00 PM on October 15, and you set the **Reporting Period** to be **Previous calendar Month**, the report will cover the period from 00:00 AM September 1 to 00:00 AM October 1.
- **Advanced**—If none of the provided options meet your requirements, select this option and use the **Start Date** and **End Date** options to specify the number of days (or months) before (or after) one of the following:
  - **Report Run Time**—Determine the start or end of the reporting period relative to the date the report is scheduled to run.
  - **Month Start**—Specify the start or end of the reporting period as an offset from the start of the calendar month in which the report is run.
  - **Month End**—Specify the start or end of the reporting period as an offset from the end of the calendar month in which the report is run.

**Scheduling an Executive Report.** When you are scheduling an executive report that includes one or more SQL reports with date variables, be aware that the date requirements for the individual reports are amalgamated and presented as though it was a single report. Specifically:

- if one or more individual SQL reports require a start date, the executive report will prompt you to enter one start date. The start date you enter will be used for all of the individual SQL reports that require a start date.
- if one or more individual SQL reports require an end date, the executive report will prompt you to enter one end date. The end

date you enter will be used for all of the individual SQL reports that require an end date.

- if both a start and an end date are required by the combined individual SQL reports, the executive report will prompt you for a date range. The start of the range you enter will be used for all start dates required in the individual SQL reports, and the end of the range you enter will be used for all end dates required in the individual SQL reports. The start of the date range has no effect on individual reports that require just an end date, and the end of the date range has no effect on individual reports that require just a start date.

## 3.10 Report Security

To understand how security applies to report definitions and report schedules, you should first familiarize yourself with how security works with PrintFleet Optimizer in general (see “Understanding PrintFleet Security” on page 147). Although these general security principles still apply, there are some additional considerations that affect who can see and use report definitions and report schedules.

### Security for Report Definitions

There are two report permissions which apply to report definitions in general:

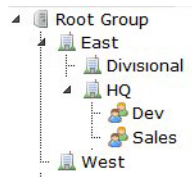
- **Report View**—All users have this permission which allows them to run and schedule report definitions that have been shared with them.
- **Report Management**—This permission allows users to create report definitions, as well as edit, copy and delete report definitions that have been shared with them by other users. This permission is typically assigned to the **Dealer** and **Admin** roles, but can be assigned to any role.

The permissions themselves are fairly straightforward, but it is worth spending a bit of time understanding the rules about how they are applied to shared report definitions.

**Sharing report definition access among groups.** The user who creates a report definition can specify whether to keep the report definition Private (only the report author and users with the **Admin** role in the root group can see and use the report definition), or to share it with other users. If the report author chooses to share the report definition, she can specify which group to share it with, and (optionally) which role(s) within the specified group. For more information, see “Specifying report parameters” on page 55.

When a report definition is shared with a group, it is automatically shared with all groups above and below the specified group. At first this may seem to include all groups (which would make the selection of a particular group pointless), but the group selection

can restrict some groups from accessing the report definition. For example, suppose you have set up your groups like this:



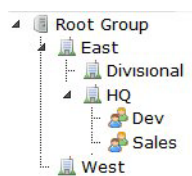
If a user were to share a report definition with the HQ group, that report definition would be automatically shared with the groups below the HQ group (Dev and Sales), as well as the groups above the HQ group (East and Root Group). It would not be shared with either the Divisional or West groups, as they are neither above nor below the specified HQ group.

Why are report definitions shared with groups both above and below a specified group? When a user shares a report definition with a group, it is assumed they want to share it with all of that group. As the subgroups of a group are considered to be part of the group, it makes sense that the report definition be shared with the subgroups as well. The reason report definitions are also shared with the groups above the specified group has more to do with management; users in higher groups are considered to require access to any content that users with the same role in a lower group could access.

Any user that is assigned to any group with which a report definition is shared (either directly or indirectly) will be able to run and schedule the report definition.

**Managing shared report definitions.** To be able to edit or delete a report definition shared by another user, you must have the **Report Management** permission, and be assigned to either the group to which the report definition was shared or to a higher group. (This is another reason why it makes a difference which group you select when sharing a report definition.) Note that this means it is possible for some users to be able to see a report definition, yet not be able to edit or delete that report definition despite having the **Report Management** permission.

For example, suppose Betty has been assigned the **Admin** role in the Dev group in the following organization:



If a user were to share a report definition with the HQ group, that report definition would be automatically shared with the groups below the HQ group (Dev and Sales), so Betty would be able to run and schedule the report definition. However, because the report definition was shared with the HQ group (which is above the group to which Betty is assigned), she would not be able to edit or delete the report definition. She would still be able to edit and delete report definitions shared with the Dev group specifically.

**Restricting access by role.** The preceding paragraph is based on the assumption that access to the shared report definition was not further restricted by role. If access to a report definition is limited to a specific role, the report definition is still shared with groups above and below the specified group, but only users in those groups that have the specified role(s), will be able to access the report definition.

**Security for SQL report definitions.** Only users who have been assigned the Admin role in the Root group are able to create or edit SQL reports.

**Security for sample report definitions.** PrintFleet automatically provides a number of sample report definitions. By default these are shared with the root group, which makes them accessible by all users. To protect the integrity of these report definitions, they can not be edited, deleted, or have their access settings modified.

## Security for Report Schedules

Any user who can see a report schedule can edit or delete the schedule. Whether or not one user can see a report schedule created by another user depends solely on the groups/roles of the user who created the schedule. You can see the report schedules created by another user if you have every group/role combination that they have. To "have" a given group/role combination, you need to have been assigned that role for either the specified group or a higher group.

For example, suppose Henry is a user who has been assigned to the **Dealer** role in the HQ group, and Janet is a user who has been assigned to the **Dealer** role in the Dev group (a subgroup of the HQ group). If Janet were to schedule a report definition, Henry would be able to see the report schedule because he has been assigned the same role as Janet in a group above hers. If Henry were to schedule a report definition, Janet would not be able to see the report schedule because she does not have the **Dealer** role in the HQ group.

## Chapter 4 Alerts

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Alerts allow you to automatically monitor your devices for problems (or even potential problems) and be notified as soon as they occur. This gives you the ability to respond to service issues quickly, strengthening your just-in-time (JIT) supplies fulfillment and service level agreements (SLAs). With one notification sent per issue you can easily monitor the status of your devices to remain one step ahead.

Alerts can also be used to schedule preventive maintenance. Maintenance can be scheduled based on a device page count or a date.

This chapter discusses:

- Overview of Alerts
- Alerts Security
- Creating Alert Definitions
- About Alert Conditions
- Managing Alert Definitions
- Working With Alert Emails
- Working with Alert Webhooks
- Supplies Notification

### 4.1 Overview of Alerts

To effectively use alerts, you should be familiar with the following concepts:

**Alert Definition.** You specify how an alert behaves by creating an alert definition. Each alert definition determines:

- what devices or Printer DCAs to monitor
- the alert conditions—what issues you want to check for
- the alert notifications—what you want PrintFleet to do if it determines the alert condition is true

See “Creating Alert Definitions” on page 74.

**Alert Conditions.** You can use alerts to monitor both Printer DCAs and devices. For Printer DCAs you can check whether or not they are stale. For devices you can check for error codes or supply levels. You can also set up recurring alerts for devices based on the number of pages printed or by dates. See “About Alert Conditions” on page 76.

**Alert Events.** Once an alert definition has been saved and enabled, PrintFleet reads the information in the definition and starts monitoring the indicated objects for the specified conditions. If the alert conditions are found to be true, PrintFleet automatically creates an alert event. The alert event remains “active” until the alert conditions are no longer true.

While the alert event is active an icon is displayed. You can view the alert events for all devices from the **Alerts View** page. See “Using the Alerts View” on page 20. You can view the alert events for a specific device from the **Alert Events** tab of the **Device Detail** page. See “Working with the Alerts tab” on page 28.

**Alert Notifications.** In the alert definition you have the option to specify whether to send notifications of the event. You can choose to send notifications via email, or by posting a Webhook to a URL, or both. You can also specify whether to send the notification at the start of the event, the end of the event, or both.

If necessary, you can also disable an alert definition. When an alert definition is disabled, PrintFleet will ignore the definition; it will not check for the conditions specified in the definition, nor will it send any notifications specified in the definition. See “Disabling and Enabling Alert Conditions” on page 83.

## 4.2 Alerts Security

For each alert definition you create you can specify whether to use basic or advanced security to control:

- Which users can edit an alert definition?
- Which users can see the alert events generated from an alert definition?
- To which devices does the alert definition apply?

### Basic Security

In basic security mode (when the **Use advanced security** check box is cleared), you specify all three security settings simply by choosing a Group:

- Any user who is assigned to a role that has the **Alert Management** permission in the specified group (or a higher group), will be able to see and edit the alert definition.
- Any users who can see the devices that belong to the specified group (or to groups below that group) will be able to see any

alert events generated from the alert definition that apply to those devices.

- The alert definition will be automatically applied to all of the devices assigned to the specified group (or to any group below that group).

## Advanced Security

In advanced security mode (when the **Use advanced security** check box is selected), you specify the three settings using three different controls:

- As with Basic security, you use the **Group** control to specify who can edit the alert definition. Any user who is assigned to a role that has the **Alert Management** permission in the specified group (or a higher group), will be able to see and edit the alert definition.
- Use the **Events visible to** control to specify which users can see the associated alert events. You can choose one of the following:
  - **Users that can edit this alert**—Any users who can edit the alert definition will be able to see the alert events generated from it.
  - **Users that can see devices in this alert**—Any users who can see the devices the alert definition applies to will be able to see the alert events generated from the definition for those devices.
- Use the **Applies to** controls to specify what group(s) or device(s) the alert definition applies to. You can choose one or more groups, as well as choose individual devices within groups.

## Possible Security Scenarios

The advanced security options give you the flexibility to set up your alerts to meet a variety of circumstances. Here are a few possibilities:

**Example #1.** Suppose you want all users to be able to see the alert events applied to their devices, but want to restrict access to the alert definition to just those in the root group. In this case you would set the **Group** to be Root Group (or whatever your top-level group is called), and set the **Events visible to** control to **Users that can see devices in this alert**.

**Example #2.** Perhaps you want to create an alert that applies to all of your devices, but only want the alert events to be visible to users in the root group. In this case you would set the **Group** to be Root Group (or whatever your top-level group is called), set the **Events visible to** control to **Users that can edit this alert** (which will be all of the users in the Root Group that have the **Alert Management** permission), and use the **Applies to** control to select the Root Group (all devices in that group and all groups below it).



## 4.3 Creating Alert Definitions

An alert definition determines:

- what devices or Printer DCAs to monitor
- the alert conditions—what issues you want to check for
- the alert notifications—what you want PrintFleet to do if it determines the alert condition is true

### To create an alert definition:

1. From the main menu, click **Alerts**.
2. From the **Alerts** page, click **Create Alert Definition**. The **Create/Edit Alert Definition** page appears.
3. In the **Alert Definition** area, do the following:
  - In the **Name** box, enter a name for the alert.
  - From the **Group** drop-down list, choose the group to which the alert will apply.
  - If you want to access additional security options, select the **Use advanced security** check box. An **Advanced Security** tab will open. For more information, see “Alerts Security” on page 72.
  - If you want to disable the alert definition so that it will be temporarily turned off, select the **Disable** check box.
4. If you want to send a notification upon the start or end of the alert event, on the **Notifications** tab, do either or both of the following:
  - To add an email notification:
    - Click **Add Email**. An **Email** box appears.
    - In the **Email** box, type the email address of the person(s) you want to be notified of the alert. If you are adding multiple addresses, separate each address with a space, semicolon, or comma.
    - Beside **Trigger on**, select the **event start** check box if you want PrintFleet Optimizer to send the notification when the alert conditions are met.
    - Beside **Trigger on**, select the **event end** check box if you want PrintFleet Optimizer to send the notification when the alert conditions are no longer being met.
    - If you want to set up additional email notifications, click **Add Email**, and repeat these steps. For more information about email notifications, see “Working With Alert Emails” on page 84.
  - To add a Webhook notification:
    - Click **Add Webhook**. A **Webhook** box appears.
    - In the **Webhook** box, type the full URL (including protocol) to which you want to post a notification of the alert.

- If you want to verify that PrintFleet Optimizer is able to successfully post a Webhook notification to the specified URL, click **Test POST**. A message box will appear indicating the result of the test.
  - Beside **Trigger on**, select the **event start** check box if you want PrintFleet Optimizer to send the notification when the alert conditions are met.
  - Beside **Trigger on**, select the **event end** check box if you want PrintFleet Optimizer to send the notification when the alert conditions are no longer being met.
  - If you want to set up additional Webhook notifications, click **Add Webhook**, and repeat these steps. For more information about email notifications, see “Working with Alert Webhooks” on page 86.
5. To add a condition to the alert definition, click **Add Condition Type**, and select one of the available types:
- **Supply Level**—Use this to be notified when a specified supply (such as black toner) is at or below a designated level. For more information, see “Supply Level Alert Conditions” on page 76.
  - **Error Codes**—Use this to be notified when a device reports a problem. For more information, see “Error Code Alert Conditions” on page 78.
  - **Stale DCA**—Use this to be notified when a Printer DCA fails to report within a specified number of days. For more information, see “Stale Printer DCA Alert Conditions” on page 80.
  - **Page Count Recurring**—Use this to be notified every time a device has printed a specified number of pages. For more information, see “Page Count Recurring Alert Conditions” on page 81.
  - **Date Recurring**—Use this to be notified on a specific date, or at regularly scheduled intervals. For more information, see “Date Recurring Alert Conditions” on page 81.
6. If you selected the **Use advanced security** check box, complete the **Advanced Security** tab:
- From the **Events visible to** drop-down list, specify who can see the associated alert event.
  - In the **Applies to** area, select the group(s) and/or device(s) to which the alert definition applies.
- For more information on the Advanced Security tab, see “Alerts Security” on page 72.
7. Click **Save Definition**. The saved alert definition is displayed in the list of definitions on the **Alerts** page.

## 4.4 About Alert Conditions

There are five different condition types you can use in an alert definition: **Supply Level**, **Error Codes**, **Stale DCA**, **Page Count Recurring**, and **Date Recurring**.

### Supply Level Alert Conditions

Use the **Supply Level** condition type if you want to be alerted when a supply level reaches or falls below a specified percentage value.

**Default Supply Conditions.** When you add a **Supply Level** condition type, PrintFleet automatically creates conditions for the four most common toner colors: Black (TONERLEVEL\_BLACK), Cyan (TONERLEVEL\_CYAN), Magenta (TONERLEVEL\_MAGENTA), and Yellow (TONERLEVEL\_YELLOW). For each of these conditions the threshold value is set to 10%. This is done for your convenience, but you can remove or edit these default conditions, or add other supply conditions, as you like. For example, if you are applying the alert definition to a single device, and that device only has a Black toner cartridge, you could remove the Cyan, Magenta, and Yellow conditions if you want (although they would simply be ignored if the device did not report values for those supplies).

**Supply Names.** The supplies you can monitor will vary between different models and manufacturers. Obviously, a color-capable device will have colored toner supplies that a mono device will not. Less obviously, one mono device might also have supplies (such as waste toner or drum kits) that another mono device does not. In some cases a device may have supplies but not report the levels in a way that allows PrintFleet to recognize them.

The names used to report supply levels also vary from one model or manufacturer to another. For example, BLACK IMAGE DRUM UNIT OKI DATA CORP is a valid supply name to enter for an OKI MC860 printer, but would be meaningless for devices from other manufacturers.

PrintFleet has tried to standardize the names for the most common supplies (such as TONERLEVEL\_BLACK, TONERLEVEL\_CYAN, TONERLEVEL\_MAGENTA, and TONERLEVEL\_YELLOW), to make it possible to apply them to as broad a range of devices as possible. However, to be sure which supplies PrintFleet can monitor for a given device, and the names to use for those supplies, go to the **Device Detail** page for that device and click on the **Supplies** tab. Any supply names listed on that tab can be entered in a **Supply Level** condition in an alert definition applied to that device.

**Using Wildcards.** If you want, you can include an asterisk '\*' in the supply name. This character acts as a wildcard, matching any text. For example, if you wanted to set up an alert to monitor all toner levels, you could either add one entry for each toner color and specify the complete name of each toner supply, or you could add one entry such as 'TONER\*' (which would match any supply name that started with TONER) or even '\*TONER\*' (which would match

any supply name that included the word TONER anywhere in the name).

**Threshold Values.** Just as different models have different supplies, or different names for similar supplies, they can also report their supply levels in different ways. For example, some devices do not report toner supply levels as a percentage at all, but rather just report the toner levels as OK, Low, or No Toner. For such devices, if you want to set up an alert for toner levels, you will have to use an **Error Codes** condition type and select the **Low Toner** check box in the **Standard Bits** area.

Other devices that do report toner levels as a percentage can still vary widely in the precision with which they report the levels. For example, some devices only report toner levels in 25% increments (100%, 75%, 50%, 25%, 0%). For such a device it won't be much help to set a supply threshold of 5% or even 10%, because the device will continue to report it has 25% toner remaining right up until the first time it reports that it has 0% toner level, by which time the alert will be too late to prevent some inconvenience for those using the device.

**Detecting a Supply Replacement.** PrintFleet uses different methods to detect when a supply has been replaced. For a toner cartridge, these might include:

- detecting that the supply is reporting a different serial number
- detecting a significant change in the toner level reported by the supply

When PrintFleet determines a supply has been replaced, it automatically ends any alert events for that supply that were started.

**Alternate Methods.** A given device will typically report an issue using more than one method. For example, when a toner level gets below a certain level the device may do one or more of the following:

- Continue to report the current toner level as a percentage. You can monitor for this using the **Supply Level** condition type.
- Set the **Low Toner** bit which is standard across manufacturers. You can monitor for this using the **Standard Bits** area of the **Error Code** condition type.
- Set a manufacturer-specific code. You can monitor for this using the **Vendor Codes** area of the **Error Code** condition type.
- Display a message on its LCD display indicating that the toner level is low. You can monitor for this using the **LCD Display** area of the **Error Code** condition type.

You can choose the method which works best in your circumstances.

**To add a supply level condition to an alert definition:**

1. From the **Create/Edit Alert Definition** page, click **Add Condition Type** and choose **Supply Level** from the drop-down list that appears. A **Supply Level** tab opens with default conditions predefined for the most common toner supplies.
2. In the **Supply Level Thresholds** area, select the **Use same value for all thresholds** check box if you are going to be adding multiple supply level thresholds to the alert definition and want all of them to use the same value. For example, if you are creating an alert definition that monitors toner levels for a color-capable device, you can select this option and PrintFleet will automatically adjust the threshold values for each toner supply you enter based on the first value.
3. For each supply you want PrintFleet to monitor, do the following:
  - In the **Supply** box enter the name of the supply.
  - In the **Threshold** box, enter the value (as a percentage) which the supply must reach or fall below before you want to be alerted. For example, to specify a threshold of 15%, type *15*.
  - If there are additional supply conditions you want to include in this alert definition, click **Add Supply** and repeat this step.

**Error Code Alert Conditions**

Devices are able to report issues (or 'errors'), in a variety of ways. The method can vary from one manufacturer to another, or from one device to another within the same manufacturer. The information can even change for the same device based on the version of the firmware it is using.

PrintFleet Optimizer provides you with the flexibility to choose which method (or combination of methods) you want to use to check the device conditions.

**Standard “bits”.** In an early attempt to standardize the error information provided by devices, the manufacturers in the printing industry came up with a list of conditions that all devices would report on through the use of assigned bits. (There are 8 “bits” in a byte, thus there are 8 conditions that can be represented in this way.)

With only 8 conditions to choose from it is impossible to represent all of the conditions that devices might need to report. Despite this obvious limitation, the broad acceptance and use of this standard means that it can still be a convenient method for monitoring some basic conditions, especially when applying an alert definition to a group of devices from multiple manufacturers.

**Standard Codes.** The standard codes are the result of another effort (specifically RFC 1759 - Printer MIB) to define a more comprehensive standard. With more conditions to choose from, standard codes allow you to create alerts that are more specific, while still being generally applicable to devices from different

manufacturers (compliance with the standard varies among manufacturers).

**Vendor Codes.** Despite various efforts to provide a single comprehensive list of device codes that covers all manufacturers, there remain differences among manufacturers in the way they report information. It is not possible to list all of the vendor-specific codes, but if you know the codes that a device uses when reporting specific conditions, you can set up an alert definition to monitor the device for those conditions by entering the associated codes in the **Vendor Codes** area. For example, a device might report the code 140 to indicate the Image Drum Up/Down Process is not working properly for the Yellow drum. To watch for this you could enter 140 in the box in the **Vendor Codes** area of an alert definition applied to this device.

Note that PrintFleet will match the text you type with any text string that includes that text. For example, if you simply type 140, PrintFleet will consider the condition to be met if the device returns a code of 140, 1140, or even XG31406Y.

**LCD Display.** Most devices have an LCD panel on which they display information to indicate their current status. Usually the status is something like `Ready`, `Idle`, `Printing`, or `Power Save`, but when a device encounters a problem, the LCD display will change to reflect that. Depending on the device, the LCD Display message can be generic (such as `Warning` or `Error`), but may also provide specific details. Similarly, you can set up a generic alert definition that monitors the text appearing on a device's LCD Display for the words `Warning` or `Error`, or you can create more specific alert definitions that check for other text strings.

**Occurrence Threshold.** Sometimes you might not care about a trivial issue that appears infrequently, but will want to be alerted if the issue becomes persistent. For example, you might not want to be alerted about a single paper jam, but might want to be notified if a given device reports say 10 paper jams in a day. The occurrence threshold allows you to specify how many separate occurrences of the indicated error code(s) must occur in a designated period before an alert event is created. Note that when a device reports a given error code in consecutive Printer DCA reports it is considered to be a single occurrence of the error code; to count as a separate occurrence the error code must be absent from a subsequent report from that device and then reappear again.

Note also that the occurrence threshold applies collectively to all of the error codes selected within a given alert definition. For example, if you had created an alert definition that included the codes for **Low Paper**, **No Paper**, and **Low Toner**, and set the occurrence threshold to "any 3 occurrences in 1 hour(s)", an alert event would not be created unless some combination of those codes totalling three (or more) times occurred within a given hour (such as 2 **Low Paper** codes and 1 **No Paper** code). If you only wanted to assign

an occurrence threshold to one of those codes you could create a separate alert definition just for that code.

**To add an error code condition to an alert definition:**

1. From the **Create/Edit Alert Definition** page, click **Add Condition Type** and choose **Error Codes** from the drop-down list that appears. An **Error Codes** tab opens.
2. In the **Standard "bits"** area, select all of the conditions you want to include in the alert definition.
3. In the **Standard Codes** area, select all of the conditions you want to include in the alert definition.
4. In the **Vendor Codes** area, if you want to add a vendor code to the alert definition, do the following:
  - In the **Match text** box, type a vendor code you want PrintFleet to watch for.
  - If there are additional vendor codes you want to include in this alert definition, click **Add Vendor Code** and repeat this step.
5. In the **LCD Display** area, if you want to add LCD display text to the alert definition, do the following:
  - In the **Match text** box, type the LCD display text you want PrintFleet to watch for.
  - If there are additional LCD displays you want to include in this alert definition, click **Add LCD Display** and repeat this step.
6. In the **Occurrence Threshold** area, if you want to specify a collective frequency for the error codes, do the following:
  - In the first box, type the total number of specified errors that must occur in a given period.
  - In the second box, type the number of time units in the period.
  - In the third box, click the drop-down arrow and choose a time unit for the period.

## **Stale Printer DCA Alert Conditions**

To be sure you are receiving the most current information from the devices you are monitoring, you can create an alert definition to notify you when a Printer DCA becomes stale (meaning it fails to provide an update for a specified period).

PrintFleet Optimizer has a system setting which defines the length of time that a device or Printer DCA must be inactive before being designated as stale. When creating an alert definition for a stale Printer DCA, you can either use the system setting, or specify an inactivity period just for use in the alert definition.

**To add a Stale DCA condition to an alert definition:**

1. From the **Create/Edit Alert Definition** page, click **Add Condition Type** and choose **Stale DCA** from the drop-down list that appears. A **Stale DCA** tab opens.
2. In the **Stale DCA** area, do one of the following:

- If you want to use the setting for stale days as defined in the system settings, select the **Use system stale days** check box.
- If you want to use a different number of days in the alert definition, or simply have the alert definition setting be independent of the system setting, enter the number of days you want to use in the **Or when a DCA is stale for <#> days** box.

## Page Count Recurring Alert Conditions

Sometimes you might want to be alerted when a device has reached some milestone in terms of pages generated. For example, to schedule preventive maintenance, you might want to know every time that a device has printed another 25000 pages. You can do this by creating an alert definition that includes a page count recurring condition.

### Note

If you apply a page count recurring alert definition to a group, an alert event will be created for every device within that group that passes the specified page count threshold (according to the indicated meter). If you only want the page count recurring definition to apply to a single device, set the alert definition to use advanced security and then select the device.

### To add a page count recurring condition to an alert definition:

1. From the **Create/Edit Alert Definition** page, click **Add Condition Type** and choose **Page Count Recurring** from the drop-down list that appears. A **Page Count Recurring** tab opens.
2. In the **Page Count Recurring** area, do the following:
  - In the **Meter Label** box, enter the name of the meter to use to monitor pages printed. You can find the meter names associated with a given device by going to the **Meters** tab in the **Device Detail** page for that device.
  - In the **Recur Cycle** box, enter the number of pages the device must generate each time before an alert event will be created.

## Date Recurring Alert Conditions

Sometimes you might want to be alerted at regular intervals, or at a specific date, in order to perform preventive maintenance on a



device. You can do this by creating an alert definition that includes a date recurring condition.

<b>Note</b>	If you apply a date recurring alert definition to a group, an alert event will be created for every device within that group when the specified date arrives. If you only want the date recurring definition to apply to a single device, set the alert definition to use advanced security and then select just the device you want.
-------------	---

### To add a date recurring condition to an alert definition:

1. From the **Create/Edit Alert Definition** page, click **Add Condition Type** and choose **Date Recurring** from the drop-down list that appears. A **Date Recurring** tab opens.
2. In the **Date Recurring** area, select one of the following intervals for the alert:
  - **Once.** Click the Calendar icon and choose the date and time that you want the alert event to be created.
  - **Daily.** Type in the interval, in days, that you want the alert event to be created, then choose the starting date and time.
  - **Weekly.** Type in the interval, in weeks, and select the day of the week that you want the alert event to be created, then choose the starting date and time.
  - **Monthly.** Type in which day of the month and the interval in months that you want the alert event to be created, then choose the starting date and time.
  - **Advanced.** Select which occurrence of which day of the week in a month, and the interval in months that you want the alert event to be created, then choose the starting date and time.

## Combining Multiple Error Code Conditions

If you want, you can include more than one error code within the **Error Codes** condition type. PrintFleet combines them using an 'inclusive OR' form of logic. You can specify one or more standard bits, standard codes, vendor codes, or LCD display strings (or any combination of these), and PrintFleet will generate an alert event for the definition as soon as any one of them is satisfied.

**Occurrence Threshold.** One significant exception to this occurs when you use the **Occurrence Threshold** setting. Suppose you had set the **Occurrence Threshold** setting to "Any 3 occurrences in 8 hour(s)". In this case, if you had specified multiple conditions within the **Error Code** tab, any three of them (such as the same condition three separate times, or three different conditions once) within a given 8-hour period would satisfy the overall **Error Codes** condition.

**Redundant Conditions.** There is often more than one way to watch for a given condition. For example, with toner supplies you can use a **Supply Level** condition where you can enter a specific toner

supply and threshold. You could also use an **Error Code** condition and choose one of the **Standard Bits** codes (**Low Toner** or **No Toner**), or one of the **Standard Codes** ([1104] Marker toner almost empty), or an **LCD Display** (such as "Low Toner"), or possibly even a **Vendor Code** specific to one of your devices.

Everyone's circumstances are different, and it will likely take a little bit of experimentation to determine which method works best for you in your circumstances.

## 4.5 Managing Alert Definitions

As you create and refine your alert definitions you will likely find it convenient to be able to perform various management activities, such as viewing, editing, and deleting alert definitions, as well as enabling and disabling alert definitions.

When viewing the alert definitions on the Alerts page, note that you can click any column heading to sort the definitions by that column. This may help you to locate a particular definition if you have many alert definitions.

### To view the alert definitions:

1. On the main menu, click **Alerts**. The **Alerts** page opens.
2. The alert definitions are displayed in a table. If necessary, you can:
  - scroll down to view additional alert definitions on the page
  - change the number of alert definitions that can be displayed on the page
  - view other pages of alert definitions
  - sort the alert definitions by clicking any column heading

### Editing alert definitions

After an alert definition is created, it can be edited at any time.

### To edit an alert definition:

1. On the main menu, click **Alerts**.
2. On the **Alerts** page, under **Options**, click **Edit** beside the alert definition you want to edit.
3. Make changes to the alert definition as desired, and then click **Save Definition**.

### Disabling and Enabling Alert Conditions

If you want, you can disable an alert definition. When an alert definition is disabled, PrintFleet will ignore the definition; it will not check for the conditions specified in the definition, nor will it send

any notifications specified in the definition. Some possible reasons to disable an alert definition might be:

- the alert definition targets a specific device, and you know in advance that the device will be going offline
- a key contact specified in multiple alert definitions has left the company and you want to change all affected alert definitions before any further notifications are sent

Once the situation has changed, you can easily re-enable the alert definition.

**To disable (or enable) an alert definition:**

1. On the main menu, click **Alerts**.
2. On the **Alerts** page, under **Options**, do one of the following:
  - Click **Disable** beside the alert definition you want to disable.
  - Click **Enable** beside the alert definition you want to enable.

**Deleting alert definitions**

After an alert definition is created, it can be deleted at any time.

**To delete an alert definition:**

1. On the main menu, click **Alerts**.
2. On the **Alerts** page, under **Options**, click **Delete** beside the alert definition you want to delete.
3. Click **Continue** to verify deletion.

## 4.6 Working With Alert Emails

For each alert definition you create, you can specify one or more email addresses to which an alert notification message will be sent. See "Creating Alert Definitions" on page 74.

**Email Subject.** The subject line of an alert email includes the following information:

- Name of the application sending the alert email. By default, the name of the application is PrintFleet Optimizer (and a version number), but it may be something else if it has been customized by the PrintFleet Optimizer administrator. See "Customizing the product name" on page 130.
- Name of the associated alert definition.
- Name of the device or Printer DCA for which the conditions have been met.
- For supply-level alert definitions, the specific supply for which the condition was met is also displayed.

For example, if you had created an alert definition called 'Replace Toner', and it was applied to a Kyocera Mita TASKalfa 250ci device which had reported a low black toner level, the subject line of the corresponding email would look something like this:

{PrintFleet Optimizer v3.1 Alert Notification} Replace Toner -  
TASKalfa 250ci - TONERLEVEL\_BLACK.

**Email Body.** The body of an alert email includes more detailed information about the alert event and about the device or Printer DCA for which the associated alert event was created. The **Alert Information** includes:

- **Alert Name**—The name of the associated alert definition.
- **Event Description**—This can provide more information on the nature of the issue. For example, it might say 'Supply Level: TONERLEVEL\_BLACK is at 5.0%'.
- **Trigger On**—This indicates whether the notification has been sent at the start of the event (when the conditions of the associated definition were first met) or at the end of the event (when the alert conditions are no longer true).

For a device-based alert email, the **Device Information** includes:

- **Device Name**—This not only helps identify the device, the name is also a hyperlink which you can click to go to the **Device Detail** page for the device.
- **Device Identification**—Various fields you can use to locate and identify the device (such as **Group Breadcrumb**, **Serial Number**, **Asset Number**, **Location**, and so forth) are displayed.
- **Last Active**—The date and time of the last Printer DCA scan received for which the reported device values met the conditions specified in the alert definition.

If the alert was based on supply levels, a **Supply Details** area appears with the following fields:

- **Label**—The label associated with the specific supply being monitored.
- **Status**—The state of the supply (such as **OK**, **Warning**, or **Critical**).
- **Level**—The supply level at the time the alert was generated. Depending on the device this might be a specific percentage, or a range of percentages.
- **Last Reported At**—The date and time at which the level was last reported.
- **Last Updated At**—The date and time at which the level was last updated.

If the alert was based on error codes, an **Active Codes** area appears with the following fields displayed for each active code:

- **Code**—The name of the error code.
- **Type**—The type of error code.
- **Description**—The description of the error code (as provided by the device).
- **Severity**—The severity of the error code (such as **Info**, **Warning** or **Critical**).
- **Last Reported At**—The date and time at which the error code was last reported.
- **Last Updated At**—The date and time at which the error code was last updated.

For a Printer DCA-based alert email, the **DCA Information** includes:

- **DCA Name**—This not only helps identify the Printer DCA, the name is also a hyperlink which you can click to go to the **DCA Information** page for the Printer DCA.
- **Last Active**—The date and time of the last check by the alert engine for which no report was received from the Printer DCA.
- **Printer DCA Identification**—Various fields you can use to locate and identify the Printer DCA (such as **Group Breadcrumb** and **Serial Number**), and other information.

## 4.7 Working with Alert Webhooks

For each alert definition you create, you can specify one or more Webhooks. A Webhook uses HTTP POST to send the alert information in JSON format to a specified URL where it can then be accessed by a third-party API (Application Program Interface). See "Creating Alert Definitions" on page 74.

The following is an example of a Webhook posting:

```
{
  "AlertDefinitionId":"0f1ae6f0-3113-4e28-bbbc-ca7247ca6b40",
  "Description":"Date-Recurring condition has been met.",
  "EventAt":"2013-07-24T19:08:00Z",
  "Id":"81ca2775-d8aa-471b-8cf7-38d014c7b77f",
  "IsActive":false,
  "LastUpdatedAt":"2013-07-25T18:15:09Z",
  "Name":"Webhook Alert Test",
  "StartedAt":"2013-07-24T19:08:00Z",
  "Term":"end",
  "Device": {
    "AssetNumber":null,
    "FirstReportedAt":"2013-06-27T17:12:49.193Z",
    "GroupId":"7ae2df44-8cb7-440c-8582-e36e66fd3802",
    "Id":"0cb08805-0940-49b5-bb06-fbf544366960",
    "IpAddress":"10.0.0.64",
```

```
"LastReportedAt":"2013-07-18T16:48:40Z",  
"LicenseStatus":"Full",  
"Location":null,  
"MacAddress":"00-14-38-92-BB-01",  
"ManagementStatus":"Managed",  
"SerialNumber":"CNGC6292J7",  
"Status":0,  
"Type":"Network"  
}  
}
```

You can perform a basic test of the Webhook functionality when creating the alert definition by clicking **Test POST** in the **Webhook** box on the **Notifications** tab. PrintFleet will attempt to send a mock alert notification to the specified URL and will display a message box indicating the outcome.

Once you have saved the alert definition and it is active in a live environment, PrintFleet will attempt to post the Webhook notification when the conditions of the alert definition are met. If PrintFleet receives anything other than a valid 2XX response from the URL, the notification request will be placed in a queue to be retried again periodically. After 5 failed attempts the Webhook is removed from the queue and the message container table is updated to reflect this (for future reference).

## 4.8 Supplies Notification

Each device has a variety of supplies (such as toner) that it consumes as part of its normal operation. If one of these supplies becomes empty, the device stops working until the supply is replaced. To minimize the time a device is unavailable, you will want to ensure that you have a replacement for the supply on hand as soon as it is needed. This will typically involve an ordering system.

PrintFleet Optimizer is not an ordering system in itself, but it plays an integral role in the overall supply-ordering process by:

- monitoring the supply levels of each device  
See "Working with the Supplies tab" on page 27.
- tracking and displaying the usage history of each supply  
See "Working with the Supply Detail page" on page 31.
- scheduling reports on supply levels
- notifying you when a supply reaches a specified minimum level  
See "Supply Level Alert Conditions" on page 76.
- sending requests for replacements  
See "Using the Supplies Order View" on page 14.
- detecting (and optionally notifying you) when a supply has been replaced

## Possible Supplies Notification Workflow

There are different ways that you might use the available functionality to implement a supplies notification system, but to have the most effective system in place it is strongly recommended that the notification system within PrintFleet be leveraged to automate your process. The following is a suggested workflow that could be used.

**Setup.** To ensure you have adequate alert coverage for your devices' supplies, you should:

- Create alert definitions with **Supply Level** conditions for every combination of device and supply you want PrintFleet to monitor.
- Create one or more catch-all alert definitions for the supplies. For example, you could create an alert definition based on the "No Toner" error code. If this alert definition gets triggered, it could help you identify devices that were either not covered by any supply level alert definitions, or that were covered by a definition that needs to be modified (such as for devices that do not report levels as percentages).
- Verify that a given supply is covered by an alert definition by viewing the **Supply Detail** page for that supply.

**Notification.** When a supply that is being monitored by an alert definition meets the specified criteria, PrintFleet automatically generates an alert event. If a notification (such as an email or Webhook) has been specified in the alert definition, PrintFleet automatically sends the notification. The notification identifies which supply is needed, which device it applies to, and (if available) the serial number, asset number, and location information. The alert event remains open until PrintFleet detects that the supply has been replaced.

**Assessment.** The person receiving the notification can access details of the alert, such as the levels for the supply over the last 90 days, and the date the supply was last requested. Based on this information they can determine whether to request a replacement supply.

**Request.** Using the **Supplies Order View**, you can specify which supplies you want to request, and how many of each supply. You can then submit the request. PrintFleet sends an email summarizing the details of the request to the address you specify. The details of the request can also be attached to the email in either XML or CSV format. The person receiving the request email will then be able to process the request using their third-party ordering system.

**Replacement.** When the third-party order is processed and the replacement supply is available, someone replaces the supply in the device. The next time the device reports its supply level, PrintFleet automatically detects that the supply has been replaced and closes the alert event. If necessary you can open the **Supply Detail** page for the supply and view a chart of the supply history. The chart displays an icon at the point at which the replacement was

detected. The associated alert definition does not need to be manually reset, but will automatically resume monitoring the supply level for the next time it meets the specified criteria.

**Manual Intervention.** If you are using alerts you should be able to automate most of the supplies replacement process. However, because some devices do not provide detailed supply-level information, you may find that in some cases you need to adopt a more manual approach. If necessary, you can:

- Use the graph on the **Supply Detail** page to assess the rate at which the supply is depleting. You might find that the supply is being used at a rate different than what you had expected, and could use this information to adjust the level threshold in the associated alert definition.
- Create a report on supply levels (for toner only), and use that to identify other devices with the same supply where the level is approaching the replacement criteria. You might do this to increase the efficiency of your order delivery and replacement.



## Chapter 5 Settings

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This chapter discusses:

- Changing your preferences
- Managing groups
- Managing devices
- Virtual Meters
- Configuring meter exports
- Configuring Canon Remote Maintenance Systems

### 5.1 Changing your preferences

Preferences, including your password and the way you want device names to display throughout the system, can be changed. It is recommended you change your password periodically for additional security. Passwords are encrypted, and cannot be recovered, so you must change your password if you lose it. If you do not have access to the area to change your password, you must request a reset from your distributor if you want to change it.

#### To change your preferences:

1. Do one of the following:
  - Click **Preferences** on the upper right side of the interface.
  - On the **Settings** menu, click **My Preferences**.
2. Do one or more of the following:
  - To change your password, type your current password in the **Old Password** box, type your new password in the **New Password** box, and retype your new password in the **Confirm Password** box.
  - To change the page that appears upon logging in to PrintFleet Optimizer, select a page from the **Starting Page** drop-down list.
  - To change the language in which the PrintFleet Optimizer user interface is displayed, select a language from the **Language** drop-down list.

- To specify the time zone to use when displaying dates in PrintFleet Optimizer, select a time zone from the **Time Zone** drop-down list.

**Note**

When working with dates, be aware of the following exceptions:

- All SQL data aggregated or filtered by aggregate SQL date calculations (by month, day, etc.) are not "time zone aware" and the periods are therefore relative to either UTC or date parameters provided via the function or report. (eg. Color vs Mono by Month report)
- Scheduled reports with a **Reporting Period** parameter of **Calendar Month** or **Previous Calendar Month** use midnight UTC for the start/end times.
- Any part of the PrintFleet Optimizer user interface that shows relative time periods (such as '2 days ago') calculates the difference between the date value provided from the server (in the user's time zone) and current time reported by the browser. If the user's time zone preference and the user's client PC time zone settings are different, the 'time ago' will be reported incorrectly.
- Custom device fields of type Date are not converted to or from UTC.
- The DCA 3.x "Released" date on the DCA Install page is not converted to or from UTC.

- To specify your regional electricity cost per kWh, enter the rate as a decimal value in the **Cost per kW h** box. This value is used in various reports when calculating power cost estimates for devices.
- To change the way device names display throughout the system, enter an acceptable string in the **Device Name Template** box, or select a method from the list underneath. The following properties are accepted: \$description, \$name, \$id, \$serial, \$asset, \$ip, \$mac, \$location, \$hostname, \$lcd, \$systemname, \$systemlocation, \$systemdescription, \$grouping, \$groupbreadcrumb, \$userlogin, \$userid, and \$username. The following are examples of strings that can be used:

```
$name (Serial: $serial, Asset: $asset)
```

```
sample output: HP 1000 (Serial: 1234, Asset: ABC)
```

```
$name-$ip-$mac
```

```
sample output: HP 1000-192.168.1.1104-  
00:01:02:aa:bb:cc
```

- Click **Save**.

Your password must be of a certain strength, as set by the administrator. The Strength bar must turn green for it to be an acceptable password. To increase the strength of your password, use both upper and lower case, both letters and numbers, symbols, or increase the length of the password.

See “Managing users” on page 121 for instructions on how to force a user to change their password the next time they log into the system.

## 5.2 Managing groups

Groups are used to segment devices into useful divisions, such as by dealer, customer, location, account rep, or any other grouping you see fit. Each group can have as many subgroups as you need, and all groups belong to the Root Group. Each device can be assigned to one group.

### Creating, editing, and deleting groups

You can create unlimited groups to properly segment devices. Each group can have an unlimited number of subgroups.

#### To create a new group:

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Groups**.
2. Select the group that will be the parent for the new group. For example, to create a location group for a customer, select the group for the specific customer, or to create a top-level group, select Root Group.
3. Click **New Group**.
4. Under **Basic Information**, select one of the following group types from the **Type** list:
  - **Dealer** for groups that represent a dealer.
  - **Customer** for groups that represent a customer.
  - **Generic** for any other group type.
5. Enter a name for the group in the **Name** box.
6. Enter an alias for the group in the **Alias** box.
7. If you selected a group of type **Dealer** or **Customer**, complete the address and other fields under the **Dealer Information** or **Customer Information** areas.
8. Click **Save**.

Group properties can be changed at any time, including the hierarchical placement. You can also view related items for existing groups, such as users and a breakdown of device counts, from the **Manage Groups** tab. For groups of type **Customer**, there is also a link to create a Printer DCA Key. To change the devices contained in a group, see “Assigning devices to groups” on page 94.

### To edit or view users and device counts for a group:

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Groups**.
2. Select the group you want to edit.
3. Do one or both of the following:
  - To change the hierarchical placement of the group, drag and drop the group to be under the new parent group.
  - To change other group properties, click **Edit**, and change the name, alias, and other group properties as desired.
4. Click **Save**.

### To view users and device counts for a group:

- On the **Manage Groups** page, in the **Related Items** area, click to expand **Users** or **Device Counts** to display users or device counts for the group. Device counts will display devices directly in the group, and in a separate area, devices in subgroups, with a breakdown of their management status.

### To create a Printer DCA Key for the group:

- On the **Manage Groups** page, select a group and then click **Create DCA**. You will be taken to the **DCA Creation** page with the group already selected. See "Administrating PrintFleet Optimizer" on page 120.

Groups can be deleted at any time. Associated subgroups and devices will be either deleted or moved, depending on what option you choose.

### To delete a group:

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Groups**.
2. Select the group you want to delete.
3. Click **Remove**.
4. In the box that appears, do one of the following:
  - Select **Delete this group and all associated sub-object(s)**.
  - Select **Delete this group and re-assign all associated sub-object(s)**, and then use the **Move To** list to specify the group to which you want the objects reassigned.
5. Click **Remove Group**.
6. In the dialog box that appears, click **OK**.

#### Note

Users cannot delete groups they have been given specific access to. For example, if a user is given access to the `Widgets` group, they cannot delete the `Widgets` group, but they can delete any child group of `Widgets` (provided they have full access to the **Manage Groups** page).

## Assigning devices to groups

Each device must be assigned to a group. By default, devices will be placed into the group that the Printer DCA is targeted to.

If a device is physically moved from one location to another, PrintFleet makes the necessary adjustments automatically:

- a new device will be created in the new group
- the device in the original group will go stale

This behavior ensures that information such as printed pages and device history is maintained in the original location up to the point of the move, and new information begins accumulating for the device in the new location. This is particularly important if the device is being moved from one customer to another; this way each customer is billed the proper amount.

### Note

PrintFleet only looks for a device in or under the group to which the corresponding Printer DCA is connected. If you move a device to a group outside the scope of the Printer DCA that reported that device, the device in the new group location will go stale, and a new device will appear in the original group.

### To assign devices to groups:

1. On the **Settings** menu, point to **Group Management**, and then click **Organize Devices**.
2. Select the group that contains the devices you want to move to a different group.
3. Optionally, click **Filters** and make selections or enter a search string to narrow down the devices you want to view.
4. Select the check box beside each device you want to move to another group.

<input type="checkbox"/>	Lexmark T634 4130420 551.019
<input checked="" type="checkbox"/>	Lexmark T634
<input checked="" type="checkbox"/>	Lexmark X500 Series 0073
<input checked="" type="checkbox"/>	Lexmark X502n
<input checked="" type="checkbox"/>	HP LaserJet 9000 MFP 008C
<input type="checkbox"/>	HP Color LaserJet 5500

5. Click and drag one of the selected devices (it will automatically drag all selected devices) to the group you want them moved to.



6. Click **Save**.

## Managing group types

You can create custom group types to assign to the groups that you create. By default, there are three group types: **Dealer**, **Customer**, and **Generic**. You may want to create additional group types that

define additional properties, such as location or account representative.

A group type is assigned to a group when the group is created. See “Creating, editing, and deleting groups” on page 92.

**To create a new group type:**

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Group Types**.
2. Click **New Group Type**.
3. Enter a name for the group type in the **Name** box.
4. From the **Display Image** list, select the image to be displayed beside groups of this type when viewing a group list. Having a unique icon for each group type makes it possible to identify the group types when they are presented in the group lists used throughout PrintFleet Optimizer. A preview of the image will display to the right of the list after it is selected.
5. Optionally, under **Group Information Designer**, add one or more group attributes by repeating the following steps for however many attributes are needed:
  - Enter a name for the attribute in the **Attribute Name** box.
  - Select an attribute type from the **Attribute Type** list.
  - Optionally, enter a default value for the attribute in the **Attribute Default** box.
  - Click **Add**.
6. In the **Attribute Viewer** area, click and drag attributes to place them in their appropriate display order.
7. Click **Save**.

**Table 8: Attribute Types for Custom Group Types**

Attribute	Description
True/False	A check box value that can be either selected or not selected
Date (yyyy-mm-dd)	Date value, in the format yyyy-mm-dd
Decimal	Numeric value that accepts decimal places
Unique Identifier (GUID)	16 character hexadecimal identifier value
Number	Numeric integral value (no decimal places)
Text	Plain text value

**Table 8: Attribute Types for Custom Group Types**

Attribute	Description
Industry Code	Industry vertical code value used to classify businesses
External Service Link	A URL value that becomes a link shown on the Device Detail page.

A new group can also be created by copying the properties of an existing group, and then modifying it if necessary.


**To create a new group by copying an existing group:**

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Group Types**.
2. Click **Copy** in the row of the group type you want to copy.
3. Enter a name for the new group type in the **Name** box.
4. Adjust any other properties of the group type as desired.
5. Click **Save**.


Group types can be edited at any type, except for the name of the type, which must remain the same. Images and attributes that are associated with the group type can be changed.

<b>Warning</b>	Any changes made to a group type will take immediate effect on existing groups of that type. A warning will be displayed showing you how many groups are currently associated with the group type you are about to edit.
----------------	--

**To edit a group type:**

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Group Types**.
2. Click **Edit** in the row of the group type you want to edit.
3. If you receive a warning notification about existing groups associated with the group type, read through and then click **Close Notice**.
4. Do one or more of the following:
  - Select a new image to be associated with the group type from the **Display Image** list.
  - In the **Group Information Designer** area, add one or more new attributes to the group type by completing the listed fields.
  - In the **Attribute Viewer** area, change the display order of attributes by clicking and dragging attributes to the desired order.
  - In the **Attribute Viewer** area, click the edit icon () in the row of an attribute you want to change, and then change

desired properties in the **Group Information Designer** area.

- In the **Attribute Viewer** area, click the remove icon (  ) in the row of an attribute you want to remove.

5. Click **Save**.

Custom group types without any associated groups can be deleted.

**To delete a group type:**

1. On the **Settings** menu, point to **Group Management**, and then click **Manage Group Types**.
2. Click **Remove** in the row of the group type you want to delete.

## 5.3 Managing devices

The core aspect of managing devices comes from collecting data stored in imaging devices using the Printer DCA. Devices can be managed further by entering information into PrintFleet Optimizer that cannot or is not being collected directly from the device. You can also set the **License Status** and **Management Status** for a device.

### License Status

Each device has a **License Status**. The License Status of a device determines such things as whether the device appears in the user interface, whether the data for the device is stored in the database, and whether a PrintFleet license is used. You can set the license status manually for a device, but there are also various scenarios where the License Status for a device is set automatically. The possible license states are: **Full**, **Hidden**, **Deleted**, **Auto Hidden (Missing Info)**, **Auto Hidden (Limit Exceeded)**, **Auto Deleted (Limit Exceeded)**, **Stale Deleted**.

The following concepts are key to understanding device licenses:

- **Device license limit**—This is the number of device licenses purchased from PrintFleet. The number of devices with a **Full** license can not exceed this limit. The **Auto Hidden** and **Auto Deleted** license states are both used by the system to enforce this limit when necessary.
- **Number of monitored devices**—This is the combined total of devices with either a **Full** or **Hidden** license.

The license states are described in greater detail in the following paragraphs.

**Full.** This is the normal state for a device. Devices with a **Full** license show up in the user interface, and can be used in reports and alerts. A device will be automatically set to **Full** when it is first detected if there are unused PrintFleet licenses. The system will also automatically change a device to **Full** if the device was in a state of **Auto Hidden (Missing Information)** and a valid serial number or page count is provided.



A device with a **Full** license has the following properties:

Property	Description
License Usage	Uses a license
Availability	Available in user interface
Storage	Associated data is stored

**Hidden.** A device with a **Hidden** license is still monitored, and its history is retained, but it does not appear in the user interface (including reports, alerts, and import/export), and it does not count against the device limit. Devices can be hidden manually by a user, but they can also be hidden automatically by the system, as follows:

- A device will be automatically set to **Auto Hidden (Missing Info)** if the device does not have either a serial number or a page count. A new device may be missing information for any of the following reasons:
  - The device does not support collection of this data
  - The firmware version of the device does not support collection of this data
  - The Printer DCA version being used does not support the device (or the particular firmware version of the device)
  - The Printer DCA timed out while trying to read the data for the initial scan (subsequent scans might provide the missing information)
- Randomly-selected devices in a **Full** state will be automatically set to **Auto Hidden (Limit Exceeded)** if the number of PrintFleet licenses has been exceeded. When new PrintFleet licenses become available, devices in this state will be automatically reset to **Full** status. The PrintFleet license limit can be exceeded for any of the following reasons:
  - Another node with existing devices is added to an existing PrintFleet instance
  - A backup is restored to a node that had more devices on it
  - Manual modifications to the database

A **Hidden** device has the following properties:

Property	Description
License Usage	Does not use a license

Property	Description
Availability	Limited availability in user interface (no reports, alerts, or import/export)
Storage	Associated data is stored but not accessible by user

**Deleted.** A device with a **Deleted** license is not monitored, no history is retained, no new data is added, and it does not appear in the user interface (including reports, alerts, and import/export). The purpose of this state is so that the system can identify the devices that have been deleted and thereby avoid having these same devices appear as new devices the next time they are scanned. Devices can be deleted manually by a user, but they can also be deleted automatically by the system, as follows:

- A new device will be automatically set to **Auto Deleted (Limit Exceeded)** if the number of PrintFleet licenses has been exceeded, and data has not yet been collected for the device. When new PrintFleet licenses become available, devices in this state will be automatically set to **Full** status (oldest devices first).
- A device will be automatically set to **Stale Deleted** if it has been inactive longer than the **Delete Inactive Devices Days** setting (as specified on the **Configuration** page). If a device becomes active again after it has been set to **Stale Deleted**, the device will be automatically set to the most applicable non-manual state.

A **Deleted** device has the following properties:

Property	Description
License Usage	Does not use a license
Availability	Limited availability in user interface (no reports, alerts, or import/export)
Storage	Associated data is not stored or updated; historical data is deleted; attributes are updated

## Management Status

Each device has a **Management Status** of either **Managed** or **Unmanaged**. Setting the **Management Status** allows sales representatives to separate devices under their control from devices managed by the competition. This is useful in planning strategies for moving more of the page volume to internally managed devices.

By default, all devices captured with the Printer DCA are marked as **Managed**, but you can change this status if you want.

## Editing device information as a group

You can filter devices by **Management Status** when you are looking at any device view. See “Sorting data” on page 6.

The **Devices** tab of the **Device Management** page displays all of the devices for a specified group. If you want, you can add or update the following information for devices on a group-wide basis:

- Device name
- Serial number
- Asset number
- Location

### To add or edit device information on a group-wide basis:

1. On the **Settings** menu, point to **Device Management**, and then click **Devices**.
2. Select a group from the **Group** list.
3. Under the **Name**, **Serial Number**, **Asset Number**, and **Location** columns, enter new or updated information as desired.
4. Click **Save**.

## Editing device information

The **Device Information** tab of the **Device Management** page allows you to add or update the following information for individual devices:

- Device name
- Serial number
- Asset number
- Location
- Model (matched to the PrintFleet model database to pull information such as duty cycle, device image, release date, supply SKUs, etc.)
- Management status (see “Management Status” on page 99)
- License status (see “License Status” on page 97)
- Custom device fields  
For information on creating custom device fields, see “Creating custom device fields” on page 101.

### To add or edit device information for an individual device:

1. On the **Settings** menu, point to **Device Management**, and then click **Device Information**.
2. Select a group from the **Group Selection** list.
3. Select a device from the **Device Selection** list.
4. Add or edit information in the **Device Information** and/or **Device Custom Information** areas as desired.

### Warning

If you change the **License Status** of a device to **Deleted**, the change is permanent. All historical data for the device will be deleted.

5. Click **Save Changes**.**Note**

To go to the **Device Detail** page from the **Device Information** page, click **View**. See “Working with the Device Detail page” on page 22.

**Device-Reported Values.** For the fields **Device Name**, **Serial Number**, **Asset Number**, and **Location**, PrintFleet records the values reported by the device. By default, these device-reported values are displayed on this page. If you change any of the values for these fields, either by editing them using this page or by importing them from a CSV file, PrintFleet then displays the edited value and displays an icon to the right of the field to indicate it is a user-defined value. If you click the icon beside a field, PrintFleet displays a pop-up menu showing the device-reported value. From the pop-up menu you can choose to either:

- Keep the user defined value
- Update to use the device value

If you choose to use the device value, the user-defined value is discarded, and the icon disappears. You must click **Save Changes** on this page if you want to preserve your changes.

## Creating custom device fields

If you want to add a specific type of device information that does not, by default, have a field in the software, you can add a custom device field, which will be added to the **Device Information** tab of the **Device Management** page (see “Editing device information” on page 100). Custom device fields can also be added to a Device View by selecting them from the **Columns** area in the **Add/Edit Device View** page. You can use custom device fields to add new information such as departments and account representatives. Custom device fields are applied on a group-wide basis.

In some cases, you may want to use additional groups instead of, or in addition to, custom device fields. For example, if you wanted to categorize your devices by location (such as “Floor 1”, “Floor 2”, etc.) or by department (such as “Finance”, “Marketing”, etc.), you could create these groups and reassign the devices into them. This is particularly helpful if you want to apply something (such as an alert or report) to the devices in those groups. See “Managing groups” on page 92.

### To create a custom device field:

1. On the **Settings** menu, point to **Device Management**, and then click **Custom Device Fields**.
2. Select the group that the custom field will apply to from the group list at the left side of the page.
3. Type the name that will be displayed with the custom device field in the **Attribute Name** box.
4. If the field will be required for all devices in the group, select the **Attribute is required** check box.

5. By default, the **Attribute is enabled** check box is selected, which will make the custom field enabled as soon as it is saved. If you do not want the custom field immediately enabled, clear the **Attribute is enabled** check box.
6. Select the type of data that will be entered in the field from the **Attribute Type** list.
7. Enter a default value for the custom field in the **Default Value** box—this is optional for fields that are not required, and mandatory for fields that are required.
8. Click **Add**.
9. Click **Save**.

**Table 9: Attribute Types for Custom Device Fields**

Attribute Type	Description
UniqueIdentifier	Globally Unique Identifier (32 character hex value)
Text	Plain text value
Date	Date value
Email	Email address value
Yes/No	A check box value that can either be selected or not
Number	Integer value (no decimals)
Decimal	Decimal value

You can specify whether or not a group will inherit the custom device fields created for its parent group (the closest group that contains the selected group). By default, this option is selected.

**To specify whether a group inherits the custom device fields from its parent group:**

1. On the **Settings** menu, point to **Device Management**, and then click **Custom Device Fields**.
2. Select a group from the group list at the left side of the page.
3. Do one of the following:
  - To have the group inherit the custom device fields of its parent group, select the **Inherit attributes from parent** check box.
  - To have the group not inherit the custom device fields of its parent group, clear the **Inherit attributes from parent** check box.
4. Click **Save**.

**To view inherited attributes:**


1. On the **Settings** menu, point to **Device Management**, and then click **Custom Device Fields**.
2. Select a group from the group list at the left side of the page.
3. Click the **Inherited Attribute(s)** tab.

Custom device fields can be edited or removed at any time. However, attribute types for custom fields cannot be edited.


**Warning**

Removing a custom device field will remove information currently stored in the field for applicable devices.

**To edit a custom device field:**

1. On the **Settings** menu, point to **Device Management**, and then click **Custom Device Fields**.
2. Select the group that the custom field is assigned to from the group list.
3. In the **Custom Fields** area, locate the field you want to edit under the **Group Attribute(s)** tab.
4. Click the edit icon (  ) in the row of the custom field you want to edit.
5. Under **Add/Edit Field**, change field properties as desired (with the exception of **Attribute Type** which cannot be changed).
6. Click **Update**.
7. Click **Save**.

**To remove a custom device field:**

1. On the **Settings** menu, point to **Device Management**, and then click **Custom Device Fields**.
2. Select the group that the custom field is assigned to from the group list.
3. In the **Custom Fields** area, locate the field you want to remove under the **Group Attribute(s)** tab.
4. Click the Remove icon (  ) in the row of the custom field you want to remove.
5. Click **OK** to confirm deletion.

**Editing device status as a group**

The **Device Status** tab of the **Device Management** page displays all of the devices for a specified group. If you want, you can add or update the following information for devices on a group-wide basis:

- **License Status** (**Full**, **Hidden**, **Deleted**, **Auto Hidden**)
- **Management Status** (**Managed**, **Unmanaged**)

You can also click a device name to open the **Device Detail** page for that device.

**To add or edit device status on a group-wide basis:**

1. On the **Settings** menu, point to **Device Management**, and then click **Device Status**.
2. Select a group from the **Group Selection** list.
3. Under the **License Status** and **Management Status** columns, make changes to the status information as desired. When you change a value, PrintFleet automatically saves your changes.

**Warning**

If you change the **License Status** of a device to **Deleted**, the change is permanent. All historical data for the device will be deleted.

**To edit the management status for one or more devices:**

1. On the **Settings** menu, point to **Device Management**, and then click **Device Status**.
2. Select a group from the **Group Selection** list.
3. Optionally, click **Filters** and make selections or enter a search string to narrow down the devices you want to view.
4. Do one or both of the following:
  - Select one of **Full**, **Hidden**, or **Deleted** in the row of each device for which you want to change the license status.

**Warning**

If you change the **License Status** of a device to **Deleted**, the change is permanent. All historical data for the device will be deleted.

- Select one of **Managed** or **Unmanaged** in the row of each device for which you want to change the management status.

Management status for individual devices can also be changed from the **Device Information** tab of the **Device Information** page. See "Editing device information" on page 100.

## 5.4 Virtual Meters

You can create virtual meters that combine the values of other meters (and optionally include a multiplier). Virtual meters can perform many tasks, such as adding up different page sizes, creating impression counters, and converting units.

For example, a device might have multiple individual Duplex meters. You might find it convenient to combine them into one virtual meter called Total Duplex.

**To create a virtual meter:**

1. On the **Settings** menu, click **Virtual Meter Manager**.
2. Click **New Virtual Meter**.

3. In the **Meter Configuration** tab of the **Virtual Meter Configuration** page, from the **Group** drop-down list, select the group to which you want to apply the virtual meter.
4. Enter the name you want to use for the virtual meter in the **Meter Name** box.
5. Under **Include**, select the check boxes corresponding to each of the meters you want to include in the virtual meter and optionally edit the **Multiplier** values for the selected meters.

**Note**

If you position your cursor over a meter name, the full meter name will be displayed in a tooltip. This can be helpful for identifying longer meter labels that are not fully visible.

6. Optionally, in the **Group/Device Assignment (Optional)** tab, restrict the virtual meter to a subset of the specified group by selecting individual subgroups or devices.
7. Click **Save**.

**To edit a virtual meter:**

1. On the **Settings** menu, click **Virtual Meter Manager**.
2. Click **Edit** beside the virtual meter you want to edit.
3. In the **Meter Configuration** tab of the **Virtual Meter Configuration** page, make the necessary changes to the virtual meter.
4. Click **Save**.

**To copy a virtual meter:**

1. On the **Settings** menu, click **Virtual Meter Manager**.
2. Click **Copy** beside the virtual meter you want to copy.
3. In the **Meter Configuration** tab of the **Virtual Meter Configuration** page, enter a name for the virtual meter in the **Meter Name** box, and make any other changes to the virtual meter as necessary.
4. Click **Save**.

**To delete a virtual meter:**

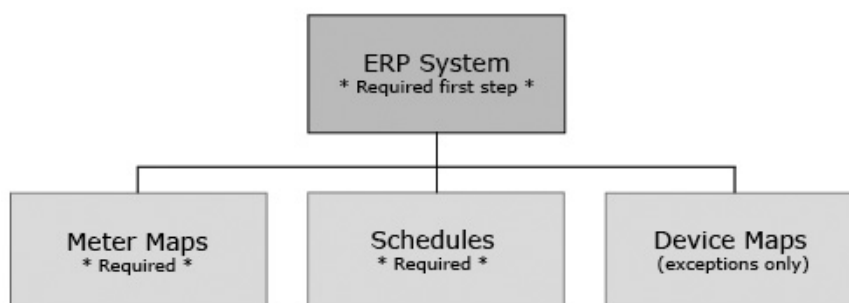
1. On the **Settings** menu, click **Virtual Meter Manager**.
2. Click **Delete** beside the virtual meter you want to delete.
3. In the **Delete Confirmation** dialog, click **Continue**.

## 5.5 Configuring meter exports

The meter export function allows you to automatically export meter information to an external ERP system or file. Regardless of which of these you want to do, you must start by specifying the configuration details.



If you are exporting meters to an ERP system, you will also need to set up meter maps, export schedules, and if necessary, device maps for your ERP system.



## Configuring a meter export system

You can export meter information either to a commercial ERP system, or to a file.

**Commercial ERP Systems.** PrintFleet meter export is compatible with the following commercial ERP systems:

- Digital Gateway's e-automate
- OMD NetVision or OMD iManager, with H2O component
- Evatic
- La Crosse NextGen or La Crosse NextGen Web

**Other Export Types.** In addition to the commercial ERP systems, you can also use **Meter Export** to export information to a file.

- **PFI Export**  
This sends a standard XML file to a designated URL.
- **Advanced Volume**  
This sends a CSV file to a specified email address. The file includes device name, group, IP address, asset number, device ID, start page count, end page count, last active date, as well as various general and machine-specific meters.
- **Current Meters**  
This sends a CSV file to a specified email address. The file includes the device name, serial number, device ID, all available meters (standard and custom) based on a specified end date, for either **Managed** devices, **Unmanaged** devices, or both, for the selected group.
- **Canon Meters**  
This sends a CSV file to a specified email address. The file includes all available meters based on a specified end date, for either **Managed** devices, **Unmanaged** devices, or both, for Canon devices in the selected group.

Each system only has to be set up once. For example, if you are using a single Digital Gateway e-automate system exclusively, your system only needs to be configured once. However, you have the option of creating multiple instances of a system if there is a need. For example, suppose you have multiple locations that use a single

ERP system, and each location should only be given access to the meter export configurations for their applicable groups/devices. If you are using more than one system, each system must be configured separately.

**To create a new meter export configuration:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **New System**.
3. Enter a name for the configuration in the **Name** box.
4. Select the group that the configuration applies to from the **Group** list (all other configuration items and permissions for the export will be based on the group selected here; if it applies to your entire system, select the root group).
5. Select the type of export system you are using from the **Export Type** list.
6. If you have chosen **Digital Gateway - e-automate**, do the following:
  - Enter the URL of the e-automate system in the **Destination URL** box.
  - Enter the meter source name configured in the ERP system (e.g. PrintFleet) in the **Meter Source** box.
  - Enter your company ID for the e-automate system in the **Company ID** box.
  - Enter the version of e-automate you are using in the **Version** box.
  - Enter a username for the e-automate system in the **Username** box.
  - Enter the corresponding password for the e-automate system in the **Password** box.
  - Choose the field that you want devices to be automatically mapped by from the **Sync By** list. Most commonly, serial number is used, and this is the default selection.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
  - Select the **Send Full Meter Group Only** check box to force the system to reject any changes unless all meters are successfully imported. This can help avoid getting the ERP system into a mixed state including both current and old meter values.
7. If you have chosen **OMD Multimeter** or **OMD Non-Multimeter**:
  - Enter the URL of your H2O system in the **H2O Destination URL** box (required for all OMD meter exports).
  - Enter the URL of your iManager system in the **iManager Destination URL** box (required for automated device mapping).
  - Enter the username for iManager in the **Username** box.

- Enter the corresponding password for iManager in the **Password** box.

<b>Important</b>	The username and password for iManager must be associated with the accounts in iManager that you want to set up meter exports for. To create a username and password that is associated with multiple accounts, obtain the REQL83 program from OMD.
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- Choose the field that you want devices to be automatically mapped by from the **Sync By** list. Most commonly, serial number is used, and this is the default selection.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
8. If you have chosen **La Crosse NextGen**:
- Enter the URL of the NextGen system in the **Destination URL** box.
  - Choose the field that you want devices to be automatically mapped by from the **Sync By** list. Most commonly, serial number is used, and this is the default selection.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
9. If you have chosen **La Crosse NextGen Web**:
- Enter the URL of the NextGen system in the **Destination URL** box.
  - Enter the meter source name configured in the ERP system (e.g. PrintFleet) in the **Meter Source** box.
  - Enter the user name in the **User** box and the application in the **App** box.
  - Choose the field that you want devices to be automatically mapped by from the **Sync By** list. Most commonly, serial number is used, and this is the default selection.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
10. If you have chosen **Evatic**:
- Enter the email address that was designated for your company to export information into your Evatic system in the **Email To** box.
  - Enter any email address into the **Email From** box.
  - Enter any email subject line into the **Subject** box.
  - Choose the field that you want devices to be automatically mapped by from the **Sync By** list. Most commonly, serial number is used, and this is the default selection.

- Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
11. If you have chosen **PFI Export**:
- Enter the URL of the PFI Export system in the **Destination URL** box.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
12. If you have chosen **Advanced Volume**:
- Enter the email address where you would like the information to be sent in the **Email To** box.
  - From the **Device Status** list, choose whether to export information on **Managed** devices, **Unmanaged** devices, or **Both**.
  - If your meter export configuration is going to cover a long period, and you want PrintFleet to include the average values for a specified time unit (**Monthly**, **Quarterly**, or **Yearly**), select the time unit you want to use from the **Averaging Interval** drop-down list. The default value is **None** (so no averaging value will appear in the exported file).
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
  - From the **Date Range** list, choose the time period for which you want to export the information.
13. If you have chosen **Current Meters**:
- Enter the email address where you would like the information to be sent in the **Email To** box.
  - From the **Device Status** list, choose whether to export information on **Managed** devices, **Unmanaged** devices, or **Both**.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
  - From the **End Date** list, choose the last day for which you want to export the information.
14. If you have chosen **Canon Meters**:
- Enter the email address where you would like the information to be sent in the **Email To** box.
  - From the **Device Status** list, choose whether to export information on **Managed** devices, **Unmanaged** devices, or **Both**.
  - Optionally, enter the number of days a device must have reported in to be included in the meter export in the **Device Stale Days** box (value must be greater than 1).
  - From the **End Date** list, choose the last day for which you want to export the information.

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15. Click **Save**.

## Configuring meter maps

When exporting to a commercial ERP system, the meter labels used by PrintFleet software must be mapped to the meter labels used by the ERP system. For example, if the meter called Total in the PrintFleet system is called Total\_Count in the external ERP system, this association must be defined for the meter to export properly. A meter map in PrintFleet is a series of these associations applied to one or more groups and/or individual devices.

Multiple meter maps can be created for one external ERP system. Meter maps will be applied to devices based on the meter map applied to the group closest to it. For example, if the root group (which includes all groups and all devices) has a meter map assigned to it, and the group Widgets has another meter map assigned to it, devices within the group Widgets will use the meter map assigned to Widgets in any cases where the meter maps for the root group and the Widgets group overlap (in areas where they do not overlap, it will use the meter map with the additional information). This allows you to assign a basic meter map to all groups and devices, and customize additional maps for specific groups and devices on an as needed basis.

### To create a new meter map:

1. On the **Settings** menu, click **Meter Export**.
2. Click **Meters** in the row of the meter export configuration for which you want to create a meter map. The **Meters** page appears. Any existing meter maps for the selected configuration will be listed on this page.
3. Click **New Meter(s)**. The **Meter Configuration** page appears.
4. Specify the devices to which you want to apply the meter map by doing one or both of the following:
  - Select the check box beside each group you want to add. All of the devices associated with any selected group will be added automatically.
  - Click on the name of a group to view individual devices associated with the group. Select the check box beside each individual device you want to add. You can use the **Check All**, **Uncheck All**, or search function to simplify this process.
5. Click **Continue**. A list of meters appears.
6. Under the **Destination Meter** column, enter the meter labels from the external ERP system as they correspond to the meters listed under the **Meter Label** column. All available meters for the devices you selected will be displayed, however, you only have to enter corresponding field names for the ones you want included in the meter export.
7. Optionally, under the **Multiplier** column, enter a multiplier for one or more meters that will be used to calculate the meter value during export. By default, the value is 1, which will not change the collected value during export. The following are some examples of how you could use a multiplier:

- export a duplex meter as two pages (multiplier=2)
  - export a legal page as 1.3 letter pages (multiplier=1.3)
  - convert square feet to square inches (multiplier=144).
8. Click **Save**.

**To edit a meter map:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **Meters** in the row of the meter export configuration for which you want to edit a meter map. The **Meters** page appears. Any existing meter maps for the selected configuration will be listed on this page.
3. Click **Edit** beside the meter map you want to edit. The **Meter Configuration** page appears.
4. Do one or both of the following:
  - Enter a new multiplier value in the **Multiplier** box.
  - Use the **Assigned Groups** and **Assigned Devices** areas to change the devices to which the meter map applies.
5. Click **Save**.

**To delete a meter map:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **Meters** in the row of the meter export configuration for which you want to delete a meter map. The **Meters** page appears. Any existing meter maps for the selected configuration will be listed on this page.
3. Click **Delete** beside the meter map you want to delete. A Delete Confirmation dialog appears.
4. Click **Continue**.

**To view the log for a meter map:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **Meters** in the row of the meter export configuration for which you want to view the log. The **Meters** page appears. Any existing meter maps for the selected configuration will be listed on this page.
3. Click **Logs** beside the meter map for which you want to view the log. The **Schedule Log** page appears, displaying a summary of each time the mapped meter value was exported.
4. If you want to view the results of a particular export instance, in the **Options** column, click **View Results** in the row of the export instance for which you want to view the results. The **Device Log** page appears. From the **Device Log** page you can see the actual meter values exported for each device from the scheduled instance.

**Setting up meter export schedules**

Meter export schedules determine what specific meters are exported and how often they are exported. Multiple schedules can be configured for a single external ERP system, for example, if you have one client that is billed on the 15th of each month, and one

client that is billed at the end of each month, these can be configured as two separate export schedules.

**To create a new meter export schedule:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **Schedules** in the row of the meter export configuration for which you want to create a new schedule. The **Schedule** page appears. Any existing schedules for the selected configuration will be listed on this page.
3. Click **New Schedule**. The **Schedule Configuration** page appears.
4. Enter a name or description for the schedule in the **Description** box.
5. Choose one of the following time intervals for the schedule from the **Cycle Pattern** list. Time intervals are based on the iCalendar standard.
  - **Daily**. Requires you to enter how often, in days, you want the meters to export. For example, if you enter 1, meters will export everyday, if you enter 2, meters will export every other day, etc.
  - **Weekly**. Requires you to enter how often, in weeks, you want the meters to export. You are also required to select which day of the week you want the meter exported. For example, if you enter 2 and select Monday, meters will be exported every other Monday.
  - **Monthly**. Requires you to enter the day of the month you want meters exported, and how often, in months, you want the meters to export. For example, if you enter 15 and 3, meters will be exported on the fifteenth day of every third month.
  - **Advanced**. Requires you to select the day of the week, which occurrence of that day during the month, and how often, in months, you want the meter export to occur. For example, if you select 2nd, Mon, and enter 2, the meter export will occur on the second Monday of every other month.
6. Enter a start date and time for the export in the **starting** box.
7. Specify which devices the schedule applies to by doing one or both of the following:
  - Select the check box beside each group you want to add. All of the devices associated with any selected group will be added automatically.
  - Click on the name of a group to view individual devices associated with the group. Select the check box beside each individual device you want to add. You can use the **Check All**, **Uncheck All**, or search function to simplify this process.
8. Click **Save**.

**To edit a meter export schedule:**

1. On the **Settings** menu, click **Meter Export**. The **Meter Export** page appears.
2. Click **Schedules** in the row of the meter export configuration for which you want to edit a schedule. The **Schedule** page appears. Any existing schedules for the selected configuration will be listed on this page.
3. Click **Edit** beside the schedule you want to edit. The **Schedule Configuration** page appears.
4. Do one or more of the following:
  - Edit the name of the schedule in the **Description** box.
  - Change the **Cycle Pattern** for the schedule.
  - Use the **Assigned Groups** and **Assigned Devices** areas to change the devices to which the schedule applies.
5. Click **Save**.

**To delete a meter export schedule:**

1. On the **Settings** menu, click **Meter Export**. The **Meter Export** page appears.
2. Click **Schedules** in the row of the meter export configuration for which you want to delete a schedule. The **Schedule** page appears. Any existing schedules for the selected configuration will be listed on this page.
3. Click **Delete** beside the schedule you want to delete. A Delete Confirmation dialog appears.
4. Click **Continue**.

**To view the log for a meter export schedule:**

1. On the **Settings** menu, click **Meter Export**. The **Meter Export** page appears.
2. Click **Schedules** in the row of the meter export configuration for which you want to view the schedule log. The **Schedule** page appears. Any existing schedules for the selected configuration will be listed on this page.
3. Click **Logs** beside the schedule for which you want to view the log. The **Schedule Log** page appears. The results of any schedules already run are displayed.
4. If you want to view the results of a particular export instance, in the **Options** column, click **View Results** in the row of the export instance for which you want to view the results. The **Device Log** page appears.

**To run a meter export schedule:**

1. On the **Settings** menu, click **Meter Export**. The **Meter Export** page appears.
2. Click **Schedules** in the row of the meter export configuration for which you want to run a schedule. The **Schedule** page appears. Any existing schedules for the selected configuration will be listed on this page.



## Configuring device maps (exceptions only)

3. Click **Run** beside the schedule you want to run. The meter export will occur within the next 10 minutes.

If you are exporting to an ERP system, devices detected by PrintFleet software must be associated with devices residing in the ERP system. For e-automate and OMD exports, the device mapping process will attempt to complete automatically.

You will need to manually configure device maps if:

- You are using an ERP system other than e-automate or OMD.
- You are using e-automate or OMD, but not all devices were successfully mapped automatically; this should usually be corrected by changing the sync field (serial number, asset number, or device ID) in the PrintFleet system to match the same field in the ERP system.

### To map PrintFleet devices to ERP system devices:

1. On the **Settings** menu, click **Meter Export**. The **Meter Export** page appears.
2. Click **Device Mapping** in the row of the ERP system you want to configure device maps for. The **Device Mapping** page appears.
3. Click the name of the group that contains the devices for which you want to configure device maps.
4. Do one of the following:
  - Enter the ERP system device ID for each device you want to map under the **External ID** column. Depending on your system, this may be a unique ID, serial number, asset number, etc.
  - If you are using e-automate or OMD, click **Auto Map** to automatically populate the **External ID** column.

<b>Note</b>	This will occur automatically without having to click the <b>Auto Map</b> button, however, it can be used to force an additional sync with the ERP system, for instance, if you have corrected a serial/asset number in the PrintFleet system and want to immediately map the changed device.
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5. Click **Save**.

## Testing and troubleshooting

You can manually force a meter export to occur the next time the export process runs (every 10 minutes), without taking into account your permanent export schedules. This allows you to test and troubleshoot a meter export configuration.

You should follow these steps to test and troubleshoot:

1. Manually force a meter export to occur.
2. Verify that all desired meters have been exported.

3. If there are any meters that you expected to be exported but were not, check the PrintFleet meter export log to determine the reason that those specific meters did not export.

**To manually force a meter export to occur:**

1. On the **Settings** menu, click **Meter Export**.
2. Click **Schedules** in the row of the configuration you want to test.
3. Under the **Run Export** column, click **Run** in the row of the schedule you want to test. The meter export will occur within the next 10 minutes.

**To view the meter export log:**

1. On the **Settings** menu, click **Meter Export**.
2. Do one of the following:
  - Click **Logs** in the row of the configuration you want to view.
  - Click **Schedules** in the row of the configuration you want to view, and then click **Logs** in the row of the specific schedule you want to view logs for.
  - Click **Meters** in the row of the configuration you want to view, and then click **Logs** in the row of the specific meter map you want to view logs for.
3. Click **View Results** in the row of the export you want to view logs for.

The meter export logs will tell you why a specific meter was not exported. It is important to understand that the PrintFleet logs may display errors for meters that you would not expect to be successful, for example, a color meter export for a monochrome device.

The following two tables list all possible entries in the **Result Message** column of the meter export log. The first table lists error messages, with their causes and possible solutions. The second table lists informational messages and their causes.

**Table 10: Meter Export Log Result Messages: Errors**

Result Message	Cause	Possible Solutions
MeterPostFail	The ERP system did not accept our meter post (generic failure message not covered by the below cases).	<p>Start by looking in the ERP system for the specific device to ensure it is configured correct and has the proper meters assigned to it.</p> <p>Double check PrintFleet has established a device mapping for the device and ensure the correct meters are assigned to it in PrintFleet.</p>
MeterSourceDoesnt Exist	The meter source does not exist in the ERP system.	The meter source entered for the ERP system in PrintFleet must match exactly to a meter source configured in the ERP system (case sensitive).
Communication Error	PrintFleet could not communicate with the ERP system (timeout, ERP system is offline, etc.).	<p>Ensure the ERP system is online and accepting web requests.</p> <p>Double check the system configuration to ensure the correct credentials have been added for this system.</p>
AuthenticationError	The credentials entered for the ERP system are incorrect.	Double check the system configuration to ensure the correct credentials have been added for this system.

**Table 10: Meter Export Log Result Messages: Errors**

Result Message	Cause	Possible Solutions
OtherError	PrintFleet did not receive a specific error message from the ERP system (an unhandled exception) so we log a generic error message.	The error message returned will always be different. It should be very specific to what the problem is.
MeterDoesntExist	The meter label configured in PrintFleet for the meter mappings does not exist for this specific device in the ERP system.	Ensure this device in the ERP has this meter assigned to it.  Double check the meters mapped for this device in the PrintFleet system.
EquipmentDoesnt Exist	A device has been configured to export from PrintFleet that does not exist in the ERP system.	Check the ERP system to ensure the device has been setup and has an external id assigned to it.  If it is setup in the ERP system, double check PrintFleets device mapping and if need be, apply the external id manually here.
NoModelAssigned	No model is associated to the device in the ERP system (OMD only).	Assign the device a model in OMD.

**Table 11: Meter Export Log Result Messages: Informational**

Result Message	Cause
MeterPostSuccess	The meter was posted successfully.
MissingRequiredMeters	A required meter for a device in an ERP system was not configured in PrintFleet. This is informational to let you know for the additional meter posts to be successful, PrintFleet had to post this required meter (e-automate only).
MeterReadingLessThanPrevious	The current meter reading in the ERP system is greater than the current PrintFleet meter reading. This log should be followed by an additional message indicating that PrintFleet re-exported the current value in the ERP system so the other meter posts would not fail.
MeterReadingEmpty	PrintFleet obtained a meter reading of 0, or could not obtain a meter reading from our system to post into the ERP system.

## 5.6 Configuring Canon Remote Maintenance Systems

If you are a Canon dealer and you want to access the Canon Remote Maintenance system from PrintFleet, you must configure a system so that PrintFleet can make the necessary connections.

If necessary, you can configure multiple systems.

**Note**

Only users who have been assigned the Admin role in the Root group can create, edit, or delete system configurations.

**To create a Canon Remote Maintenance system configuration:**

1. On the **Settings** menu, click **Canon Remote Maintenance System**. The **Canon Remote Maintenance System** page appears.

2. Click **Create New System**. The **Canon Remote Maintenance System Add/Edit** page appears.
3. In the **Canon Remote Maintenance System Details** area, enter the following:
  - **System Description**  
This is a label used within PrintFleet to distinguish one system configuration from another.
  - **Group**  
This determines which PrintFleet device group the configured system can provide information for.
  - **Company ID**  
This determines which company to get data from.
4. Enter your Canon-provided **Meter Read Account** credentials in the **Username** and **Password** boxes.
5. Enter your Canon-provided **Event Information Account** credentials in the **Username** and **Password** boxes.
6. Enter your Canon-provided **Web-Portal Login Account** credentials in the **Username** and **Password** boxes.
7. Click **Save**.

There may be a delay of several minutes between the time you save your configuration and when you begin receiving information from your system. Once communication has been established, a **Remote Configuration** tab will appear in the **Device Detail View** for any Canon device associated with the configured system. For information on managing Canon devices using the **Remote Configuration** functionality, see "Working with the Remote Configuration page" on page 32.

#### **To edit a Canon Remote Maintenance configuration:**

1. On the **Settings** menu, click **Canon Remote Maintenance System**. The **Canon Remote Maintenance System** page appears.
2. Click **Edit** beside the configuration you want to edit. The **Canon Remote Maintenance System Add/Edit** page appears.
3. Make the necessary changes.
4. Click **Save**.

#### **To delete a Canon Remote Maintenance configuration:**

1. On the **Settings** menu, click **Canon Remote Maintenance System**. The **Canon Remote Maintenance System** page appears.
2. Click **Delete** beside the configuration you want to delete. A **Delete Confirmation** dialog appears.
3. Click **Continue**.

## Chapter 6     **Administering PrintFleet Optimizer**

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It is the administrator's job to setup, maintain, and troubleshoot the various components of the PrintFleet system. The administrator receives technical training prior to launching the system, and can contact technical support at PrintFleet problems arise that are not covered in this guide. See "Contacting Technical Support" on page 5.

If you are not an administrator for your PrintFleet system you will not need to know about the topics discussed in this chapter. In fact, most of the functions covered in this chapter will be unavailable to anyone who does not belong to the administrator role.

This chapter discusses:

- Managing users
- Managing roles
- Exporting and Importing Device Data
- Branding the user interface
- Managing Printer DCA installations
- Managing licenses, system information and troubleshooting
- Monitoring Outbound Email
- Configuring system wide settings
- Understanding PrintFleet Security
- Understanding the system architecture
- Troubleshooting stale data issues
- Troubleshooting database errors
- Compressing, backing up, and restoring the database
- Logging
- Providing technical support
- Distributing software updates
- Integrating PrintFleet Optimizer logins with an existing system using one time passwords

## 6.1 Managing users

An unlimited amount of users can be created for the PrintFleet Optimizer web interface. In addition to user name and password, the following settings can be configured for each user:

- Name of the user
- Groups the user has access to
- Roles the user will have for each group
- Expiry date of the account (if applicable)
- Starting page for the user
- Time zone preference for the user
- Elements that will make up device names in the system for the user (may include, name, serial number, IP address, etc.)

For more information on groups, see “Managing groups” on page 92.

For more information on roles, see “Managing roles” on page 124.

You can view a list of existing users and their login name (typically their email address), first name, last name, last login date and time, and groups and role access.

### To view existing users:

- On the **Administration** menu, click **Users**.

A separate user account should be created for each individual who is granted access to the PrintFleet Optimizer web console. The following describes how to create a new user account, and how to create a new user by copying the permissions of an existing account.

### To create a new user account:

1. On the **Administration** menu, click **Users**. The **Users** page appears.
2. Click **New User**. The **User Add/Edit** page appears.
3. In the **Information** area, enter the following:
  - **User Name** (often the user’s email address)
  - **First Name**
  - **Last Name**
  - **Password** (repeat in the **Confirm Password** box)
4. Optionally, in the **Settings** area, complete one or more of the following:
  - Type or select an expiry date for the account in the **Expiry Date** box. Note that the account will expire at the start of the specified date, not at the end.
  - Select the **Disabled** check box to deactivate the account. The user will appear in the user list, but will not be able to access the software.



- Select the **Force Password Change At Next Login** box to require the user to change their password the next time they login.
  - From the **Starting Page** list select the first page that will appear each time the user logs in.
  - From the **Language** list select the language in which the PrintFleet Optimizer user interface will appear.
  - From the **Time Zone** list select the time zone in which the user is located. See "Changing your preferences" on page 90 for more information about the way time zones are used in PrintFleet Optimizer.
  - To specify your regional electricity cost per kWh, enter the rate as a decimal value in the **Cost per kW h** box. This value is used in various reports when calculating power cost estimates for devices.
  - Enter a customized way to display device names throughout the system in the **Device Name Template** box, or select a method from the list underneath. For more information on the **Device Name Template**, see "Changing your preferences" on page 90.
5. In the **User Access** area, click **Add Entry**.
  6. Click the name of a group that the user will have access to. If a group contains one or more subgroups, the user will have access to those groups as well. To give a user access to all groups, select Root Group.
  7. Select one or more roles the user will have for the selected group. The user's permissions are the combination of the permissions granted to all selected roles. For more information on permissions and security in PrintFleet Optimizer, see "Understanding PrintFleet Security" on page 147.
  8. Repeat steps 6 and 7 to give the user access to additional groups.
  9. Click **Save**.

**To create a user account with the same permissions (group access and roles) as an existing account:**

1. On the **Administration** menu, click **Users**. The **Users** page appears.
2. Under the **Options** column, click **Copy** in the row of the user account with the permissions you want to duplicate (alternatively, click **Edit** and then click **Copy** on the **User Add/Edit** page).
3. Complete the fields in the **Information** and **Settings** areas.
4. Optionally, edit default permissions in the **User Access** area.
5. Click **Save**.

After a user account is created, it can be edited at any time.

### To edit an existing user account:

1. On the **Administration** menu, click **Users**. The **Users** page appears.
2. Under the **Options** column, click **Edit** in the row of the user account you want to edit. The **User Add/Edit** page appears.
3. Change the user account information as desired.
4. Click **Save**.

If a user account is no longer needed, it can be deleted or disabled at any time. Deleting a user will remove it from the system. Disabling a user will retain the user record in the system, but will remove access to the software.

### To delete a user account:

1. On the **Administration** menu, click **Users**. The **Users** page appears.
2. Under the **Options** column, click **Delete** in the row of the user account you want to remove.
3. Click **Continue** to verify the deletion.

### To disable a user account:

1. On the **Administration** menu, click **Users**. The **Users** page appears.
2. Under the **Options** column, click **Edit** in the row of the user account you want to disable. The **User Add/Edit** page appears.
3. Under the **Settings** area, select the **Disabled** check box.
4. Click **Save**.

#### Note

The effects of disabling a user account are not instantaneous—there may be a delay before the system process the information and actually disables the account.

## Special User Accounts

There are a few user accounts that are automatically included in each installation of PrintFleet Optimizer. They are included because they serve specific purposes, as described below:

**System User.** This user account is used by PrintFleet Optimizer to perform a variety of internal functions. While it is possible to edit this user account, you should not make any changes to it (or need to).

**System Admin.** This user account is automatically provided as a way to log in to the system with the highest level of access (a user with the Admin role in the root group), so that they can create other groups and user accounts, and have access to all parts of the system. It is possible to delete this user account, but you must always have at least one valid account with the Admin role in the root group.

## 6.2 Managing roles

Roles are used to assign permissions to users. One role can be assigned to an unlimited number of users. Users can be assigned multiple roles and can be assigned different roles for different groups. The total set of permissions assigned to a user is the combination of all permissions for all assigned roles.

For instructions on assigning roles to users, see “Managing users” on page 121.

PrintFleet Optimizer comes with four standard roles already created:

- **Default.** Assigned to all users, and cannot be deleted.
- **Admin.** Provides access to the entire system, and cannot be edited or deleted.
- **Dealer.** Provides dealer level access to the system.
- **Customer.** Provides customer level access to the system.

You can create as many additional roles as needed, and can edit the permissions for any role, with the exception of the Admin role, which always has all permissions. When roles are edited, changes to permissions are made to every user with that role.

### To create a new role:

1. On the **Administration** menu, click **Roles**. The **Roles** page appears.
2. Click **New Role**. The **Role Configuration** page appears.
3. Under **Role Information**, do the following:
  - Enter a name for the role in the **Name** box.
  - Enter a description for the role in the **Description** box.
4. Under **Role Permissions**, select each permission you want the role to have.
5. Click **Save**.

### To edit an existing role:

1. On the **Administration** menu, click **Roles**. The **Roles** page appears.
2. In the **Options** column, click **Edit** in the row of the role you want to edit. The **Role Configuration** page appears.
3. Change the name, description, and permissions as desired.
4. Click **Save**. Changes to permissions will automatically be applied to all users assigned to the role.

You can delete any existing role, with the exception of the Default and Admin roles.

**To delete a role:**

1. On the **Administration** menu, click **Roles**. The **Roles** page appears.
2. In the **Options** column, click **Remove** in the row of the role you want to delete.
3. Click **Confirm**.

## 6.3 Exporting and Importing Device Data

You can export and import device information. The primary intended use for this functionality is to allow customers to easily make bulk updates by exporting device information to an external file, making changes to the data in the file, and then importing the file with the changes back into PrintFleet Optimizer. You might do this if you were changing a property that affects many devices, such as adding a prefix to all of your asset numbers, or changing the names of your locations. You might also want to export device information to be able to view the information for many devices at once, or to use the information with a third-party application.

### Exporting device information

You can export the device information for a selected group to a file in comma separated values (.CSV) format. The file includes information for the devices in the selected group and for all subgroups of that group. The exported fields are as follows:

- Device ID
- Device Name
- Serial Number
- Asset Number
- Location
- Device Type
- IP Address
- MAC Address
- Subnet Mask
- Service Tag
- Host Name
- Creation Date
- Last Active Date
- Custom Fields

<b>Note</b>	<p>When PrintFleet exports custom fields for a selected group, it only exports the custom fields that are enabled and which are shared by all of the devices in the selected group.</p> <p>Also, if a group and a subgroup both have custom fields defined with the same name, and both fields are enabled, the value associated with the lower level group will be exported.</p>
-------------	---

#### To export device information:

1. On the **Administration** menu, click **Import/Export**. The **Import/Export** page appears.
2. On the **Export** tab, from the **Device Group** list, choose the group from which you want to export device information.
3. Click **Download CSV**. The file is downloaded according to your browser settings. The name of the downloaded file is ExportedDevices followed by a date and time stamp (such as ExportedDevices-2012-02-28-02-43-PM.csv).

After you export the device information, you can edit the .CSV file, and then use the Import function to load the changes into PrintFleet.

<b>Note</b>	<p>When editing the .CSV file, make sure that the unique ID value for each device (the value in the DeviceId column) stays with the relevant row. If the IDs become mixed up, and you import the changes, the integrity of your system could be compromised.</p>
-------------	--

## Importing device information

You can import the following device fields from a file:

- Device Name
- Serial Number
- Asset Number
- Location
- Custom Fields

### Note

When PrintFleet imports custom fields, it will only import a column from the file if the column name is an exact match to a custom device field name.

If a group and a subgroup both have custom fields defined with the same name, and both fields are enabled, values for that field will be imported to the subgroup.

If you are entering information for a custom device field that has an **Attribute Type** of **Date**, be sure to enter the date value using a format that is consistent with the format being used on your PrintFleet Optimizer server.

The file you import must include a column containing device IDs for existing devices; you cannot use the **Import** function to add new records.

Changes to any fields other than those listed above will be ignored.

Unlike the export operation, you can import information for devices belonging to different groups.

### Note

You can only import comma or tab delimited files.

If you are editing the file using Microsoft Excel, and the file includes unicode characters, you must save the file in Unicode (.txt) format.

### To import device information:

1. On the **Administration** menu, click **Import/Export**. The **Import/Export** page appears.
2. On the **Import** tab, click the **Browse** button, then select the file containing the device information you want to import. PrintFleet automatically checks the specified file to ensure it meets the requirements, then displays a check box for each field which could be imported from the file.
3. Select the check box beside each field you want to import.
4. Click **Import changes**.

## 6.4 Branding the user interface

The user interface for PrintFleet Optimizer can be branded to match your company's marketing initiatives. If necessary, branding settings can be customized for different groups. The following items can be branded in the user interface:

- Product logo
- Executive report cover (front and back)
- Primary and link colors
- Product name
- Login page

### Customizing the product logo

The logo that appears in the upper left corner of the PrintFleet Optimizer interface can be customized. Any web format image is acceptable. PrintFleet will automatically scale the image to fit, but an original size of 70 pixels high by 280 pixels wide would be ideal.

#### To customize the logo:

1. On the **Administration** menu, click **Custom Branding**. The **Custom Branding** page appears.
2. Select the group that the branding applies to.
3. On the **Images** tab, in the **PFO Logo** area, do one of the following:
  - To use an image from a file, click the **Browse** button to locate an image file on your computer, and then click **Upload**.
  - To use an image from a URL, type the URL of an uploaded image (including the file name and extension of the image) in the **From URL** box, and then click **Load**.
4. Click **Test** to preview the changes.
5. Click **Save**.

### Customizing the Executive Report cover

The front and back pages that appear on executive reports can be customized. If you choose a new custom image, PrintFleet will automatically scale the image to fit as necessary. The custom image appears when any user from the specified group runs an executive report that has been set up to include a cover page with custom branding.

#### To customize the executive report cover pages:

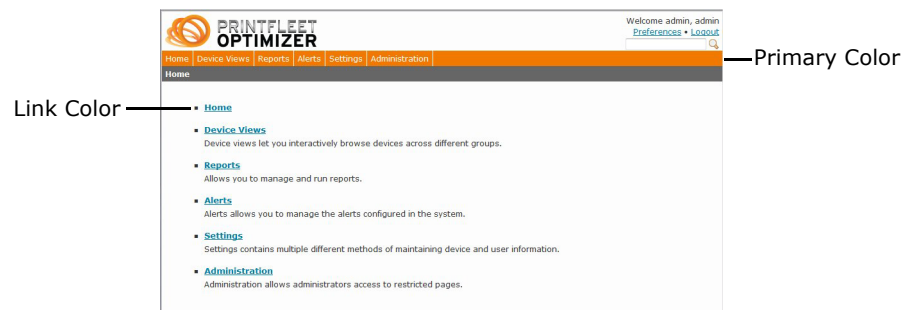
1. On the **Administration** menu, click **Custom Branding**. The **Custom Branding** page appears.
2. Select the group that the branding applies to.
3. On the **Images** tab, in the **Exec Report Start** area, do one of the following to customize the front cover:
  - To use an image from a file, click the **Browse** button to locate an image file on your computer, and then click **Upload**.

- To use an image from a URL, type the URL of an uploaded image in the **From URL** box, and then click **Load**.
- 4. In the **Exec Report End** area, do one of the following to customize the back cover:
  - To use an image from a file, click the **Browse** button to locate an image file on your computer, and then click **Upload**.
  - To use an image from a URL, type the URL of an uploaded image in the **From URL** box, and then click **Load**.
- 5. Click **Save**.

## Customizing interface colors

Some interface colors can be customized. Specifically, you can change:

- **Primary color**  
This color is used for the menu background color as well as the color for some buttons.
- **Link color**  
This color is used for links (such as the device name links that appear on the **Technical View**).



### To customize interface colors:

1. On the **Administration** menu, click **Custom Branding**. The **Custom Branding** page appears.
2. Select the group that the branding applies to.
3. Click the **Styles** tab.
4. Do one or both of the following:
  - Click in the **Primary Color** box, and then click one of the colors in the color selection panel that appears. The color you selected is displayed in the **Primary Color** box along with the corresponding hexadecimal RGB value. If necessary you can also specify a color by typing the hexadecimal code for the color you want.
  - Click in the **Link Color** box, and then click one of the colors in the color selection panel that appears. The color you selected is displayed in the **Link Color** box along with the corresponding hexadecimal RGB value. If necessary you can



also specify a color by typing the hexadecimal code for the color you want.

5. Click **Test** to preview the changes.
6. Click **Save**.

**Note**

With versions of PrintFleet Optimizer prior to 3.1 you could set different custom branding options. These custom branding settings are preserved when you upgrade to PrintFleet Optimizer 3.1 (or later). However, the first time you change either the **Primary Color** or **Link Color** setting, all of the other legacy branding settings automatically and permanently revert to their default values.

## Customizing the product name

The name of the product (software) that appears in the title bar of the web browser can be customized. By default, the product name is PrintFleet Optimizer.

### To customize the product name:

1. On the **Administration** menu, click **Custom Branding**. The **Custom Branding** page appears.
2. Select the group that the branding applies to.
3. Click the **Miscellaneous** tab.
4. In the **Product Name** box, type your customized product name.
5. Click **Test** to view the new product name in the title bar of the web browser.
6. Click **Save**.

## Customizing the login page

The login page for PrintFleet Optimizer can be customized. As part of the PrintFleet Integrated Marketing Package, you will receive a custom designed login page for your PrintFleet Optimizer interface.

A custom login page is an HTML page that sends the input username and password to the main PrintFleet Optimizer login page using a post command. For a custom login page to function properly, you need to include the following form tags in the HTML of the custom login page:

```
<form action="https://yourserverURL/login.aspx"
method="post" name="frmLogin" id="frmLogin">
</form>
```

**Note**

In this example, `https` is used because under most circumstances you will have associated your login page with an SSL certificate. If, however, this has not been done, `http` can be used.

The custom login page is effectively automatic, using a cookie to store the URL of the login page. The custom login page can be hosted anywhere. When a user attempts to log in to PrintFleet Optimizer, the HTTP Referrer header sent by the client will be stored

in a cookie, and any links that would normally go to login.aspx will instead go to this URL.

The following is an example of the minimum HTML required for your PrintFleet Optimizer login page:

```
<html>
<body>
<form action="http://printfleet.com/pfo/login.aspx"
method="POST">
User: <input name="txtUsername" type="text" /><br />
Password: <input name="txtPassword" type="password" /
><br />
<input type="submit" value="Login" />
</form>
</body>
</html>
```

Optionally, the custom login page can be coded to read an error from the URL (the parameter name is `error`). For example, the URL might be the following:

```
http://mysite.com/custom_login.html?error=
```

This can be done using a server-side language or on the client-side (in regular HTML) using Javascript. To implement error handling using Javascript, include the following script somewhere in the page (for example, in the `<head>` section):

```
<script type="text/javascript">
function errorMessage(returnOutput) {
    var queryRegex = /error=(.*?) (\&|\$)/;
    var urlRegex = /%([^\%]{2})/;
    if (match =
    queryRegex.exec(window.location.href)) {
        var message = match[1].replace(/\+/g, ' ');
        console.log(message.replace(/\+/g, ' '));
        while (matchUrl = urlRegex.exec(message)) {
            var charVal = String.fromCharCode(
                parseInt(matchUrl[1],16) );
            message = message.replace(matchUrl[0],
                charVal);
        }
    }
    if (message) {
        if (returnOutput) {
            return message;
        } else {
            document.write('<b>Error:</b> ' +
                message);
            return message;
        }
    }
}
```

```

    }
  }
  return false;
}
</script>

```

Include this fragment where you want to display the error:

```

<script type="text/javascript"> errorMessage();
</script>

```

Once the html page has been completed it needs to be uploaded to the server and associated to Internet Information Services (IIS) to have it made public.

It is also possible to specify a custom URL for the login page, if you always want to return to a specific URL. To do this, add a hidden element called `referrer` with the URL of the login page as the value. If this parameter is specified, the actual HTTP referrer will be ignored and this will be used instead. Normally you would not use this parameter.

## 6.5 Managing Printer DCA installations

Each Printer DCA installation requires a PIN Code to activate to run. These PIN Codes can be generated and managed using PrintFleet Optimizer. For more information about the Printer DCA, see the *PrintFleet Printer DCA User Guide*.

### Downloading Printer DCA

If you need to install Printer DCA on a new machine, you can download the Printer DCA software from your PrintFleet Optimizer server.

#### To download Printer DCA:

1. On the **Administration** menu, select **DCA Install**. The **DCA Install** page appears.
2. On the **DCA Install** page there is a separate tab for each version of the Printer DCA that is available. If necessary, click the tab to switch to the version of the Printer DCA that you want to download.
3. If necessary, you can review details about the Printer DCA version:
  - Click **Prerequisites** to view the software requirements associated with the Printer DCA version.
  - Click **Release Notes** to view the release notes for the Printer DCA version.
4. When you are ready to proceed, click the link beside **Download**.

## Generating PIN Codes for Printer DCA version 4.0 or greater

### To generate a PIN Code for Printer DCA version 4.0 or greater:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Click **New DCA**. The **DCA Creation** page appears.
3. Select **Version 4.0 or greater**.
4. Select the appropriate group from the drop-down list or click **Create New Group** button.
5. Define the Printer DCA information: enter the **DCA Name**. Optionally, set a **DCA Expiry Date** by clicking the calendar icon and selecting a date.
6. Click **Create DCA**. The Pending PIN Code is generated and displayed in the **DCA Information** page's **General Information** tab, and is valid for a single use. The PIN Code can be emailed to an appropriate person via **Send this PIN via email**. Alternately, the PIN Code can be copied and pasted into the **DCA Activation** page. This PIN Code remains visible in the **General Information** tab while the Printer DCA is in a Pending Activation status. Once this PIN Code is used to activate a Printer DCA client, the Printer DCA has an active status and the PIN Code will no longer be visible.

## Generating Manual Keys for Printer DCA version 3.x

Generating a manual key for Printer DCA can only be done for Printer DCA 3.x versions. Generating a manual Printer DCA key requires the Printer DCA to already be installed, but not yet activated, at the location. The person who installed the Printer DCA needs to provide you with either the fingerprint code from the Printer DCA activation page, or the HardDisk serial number of Volume Drive C.

### Note

Before generating a key, check that the URL for your PrintFleet Server has been specified in the **Server URL** box in the **General Settings** area of the **Configuration** page.

### To generate a manual Key for Printer DCA version 3.x:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Click **New DCA**. The **DCA Creation** page appears.
3. Select **Version 3.0**.
4. Select the appropriate group from the dropdown list or click **Create New Group** button.
5. Select **Manual** for the **DCA 3.0 Key Generation Method**.
6. Define the Printer DCA information: enter the **DCA Name**. Optionally, set a **DCA Expiry Date** by clicking the calendar icon and selecting a date.
7. Do one of the following:
  - Enter the fingerprint code as displayed on the Printer DCA activation page in the **Fingerprint Code** box.

- Enter the HardDisk serial number of Volume Drive C of the computer installed with the Printer DCA in the **HardDisk Serial #** box.
8. Click **Create DCA**. The Pending PIN Code is generated and displayed in the **DCA Information** page's **General Information** tab. The PIN Code can be emailed to an appropriate person via **Send this PIN via email**. Alternately, the PIN Code can be copied and pasted into the **DCA Activation** page. This PIN Code remains visible in the **General Information** tab while the Printer DCA is in a Pending Activation status. Once this PIN Code is used to activate a Printer DCA client, the Printer DCA has an active status and the PIN Code will no longer be visible.

### Generating Automatic Keys for Printer DCA version 3.x (pregenerated)

Automatic Printer DCA Keys can be generated in advance of a Printer DCA installation. This allows the person installing the Printer DCA to have the Printer DCA PIN Code on hand during installation.

<b>Note</b>	Before generating a key, check that the URL for your PrintFleet Server has been specified in the <b>Server URL</b> box in the <b>General Settings</b> area of the <b>Configuration</b> page.
<b>Note</b>	Pregenerated Printer DCA Automatic Keys may not work in environments using proxy servers. In these instances, you must use a Key from a manual Printer DCA 3.0 generated using the Printer DCA's fingerprint code.

#### To generate an Automatic Key for Printer DCA version 3.x:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Click **New DCA**. The **DCA Creation** page appears.
3. Select **Version 3.0**.
4. Select the appropriate customer group from the group list or click on **Create New Group**.
5. Set **Automatic** for the **DCA 3.0 Key Generation Method**.
6. Define the Printer DCA information: enter the **DCA Name**. Optionally, enter a **DCA Expiry Date** by clicking the calendar icon and selecting a date.
7. Click **Create DCA**. The Pending PIN Code is generated and displayed in the **DCA Information** page's **General Information** tab. The PIN Code can be emailed to an appropriate person via **Send this PIN via email**. Alternately, the PIN Code can be copied and pasted into the **DCA Activation** page. This PIN Code remains visible in the **General Information** tab while the Printer DCA is in a Pending Activation status. Once this PIN Code is used to activate a

Printer DCA client, the Printer DCA has an active status and the PIN Code will no longer be visible.




## Managing Printer DCAs

You can check the status of a Printer DCA installation via the **DCA Listing** page. Printer DCA information can be viewed or edited at any time. A Printer DCA can also be deleted or set to inactive or active. A new PIN Code can also be created for a Printer DCA version 4.0 or greater.

### To check the status of a Printer DCA:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to view the Printer DCA status.
3. In the **Data Collection Agent (DCA) Listing** area, the status of the Printer DCA will be visible in the **Status** column:

**Table 12: Understanding the Traffic Light System**

Icon	Status Interpretation
	<b>Active.</b> The Printer DCA has been activated using PIN Code.
	<b>Inactive.</b> The Printer DCA has been set to Inactive or has expired.
	<b>Pending Activation.</b> PIN Code has not been used to activate Printer DCA client.

### To view Printer DCA information:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to view the Printer DCA status.
3. In the **Data Collection Agent (DCA) Listing** area, click on the Printer DCA name link for the Printer DCA you want to view. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.

### To edit an existing Printer DCA:

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to edit the Printer DCA.

3. In the **Options** column, click **Edit** beside the Printer DCA you want to edit. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.
4. Make changes to the **DCA Name, Group, Expiry Date** fields, and then click **Save**.

#### **To delete an existing Printer DCA:**

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to delete the Printer DCA.
3. In the **Options** column, click **Delete** beside the Printer DCA you want to delete. A dialog box prompts you to confirm your wish to delete this Printer DCA.
4. Click **Confirm** to complete the Printer DCA deletion, or **Cancel** to abort the Printer DCA deletion. After deletion, files will not be processed for the Printer DCA.

#### **To set a Printer DCA Inactive:**

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to set the Printer DCA to inactive.
3. In the **Data Collection Agent (DCA) Listing** area, click on the Printer DCA name link for the Printer DCA you want to change. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.
4. In the **DCA Information** page, click **Set Inactive**. A dialog box prompts you to confirm your wish to set this Printer DCA to Inactive.
5. Click **Confirm** to set to inactive or **Cancel** to abort. With an Inactive status, files will not be processed for the Printer DCA.

#### **To set a Printer DCA Active:**

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to set the Printer DCA to active.
3. In the **Data Collection Agent (DCA) Listing** area, click on the Printer DCA name link for the Printer DCA you want to change. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.
4. In the **DCA Information** page, click **Set Active**. The Printer DCA will have an active status and files will be processed.

#### **To create a new PIN Code for a Printer DCA (only available for Printer DCA version 4.0 or greater):**

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.

2. Select the group for which you want to create a new pin code for the Printer DCA.
3. In the **Data Collection Agent (DCA) Listing** area, click on the Printer DCA name link for the Printer DCA for which you want to create a new pin code. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.
4. In the **DCA Information** page, click **Create New PIN**. A dialog box prompts you to confirm your wish to create a new PIN for the Printer DCA.
5. Click **Confirm** to create a new PIN Code or **Cancel** to abort. The new PIN Code will be generated and the Printer DCA will be in a pending activation state. Until reactivated, files will not be processed for the Printer DCA.

### Remotely managing Printer DCA installations using Semaphore

You can post commands for the Printer DCA to check using PrintFleet Optimizer's Semaphore capability. Semaphore commands are only available for active Printer DCAs that have processed files at least once. Posted commands will be followed by the Printer DCA if it has **Intelligent Update** enabled. See the *PrintFleet Printer DCA User Guide* for more information.

1. On the **Administration** menu, select **DCA Administration**. The **DCA Administration** page appears.
2. Select the group for which you want to remotely manage a Printer DCA.
3. In the **Data Collection Agent (DCA) Listing** area, click on the Printer DCA name link for the Printer DCA you want to manage. The **DCA Information** page opens with the **General Information** tab displayed for the selected Printer DCA.
4. Click the **Semaphore Commands** tab.
5. In the **Semaphore Commands** tab, click **Add a new command**.
6. From the **Command Type** drop-down list, select one of the available options.

**Table 13: Available Semaphore Commands for the Printer DCA**

Command	Function and Required Values
Deactivate	Stops the Printer DCA service. Does not require any input values.
Update	Updates the Printer DCA software to the most recent available on the PrintFleet Optimizer server. Does not require any input values.
MIB Walk	Performs a complete MIB walk (device scan) for one device. Device's IP must be entered into the IP Address input box.



7. If you selected MIBWALK, enter the device's IP address in the **IP Address** box.
8. Specify a **Run Schedule** by doing one of the following:
  - Select **ASAP** to run the command as soon as possible.
  - Select a date from the calendar and enter a time.
9. Click **Create**.

## 6.6 Managing licenses, system information and troubleshooting

The **PFE System Information** area contains four subsections used for managing your licenses, viewing system information, and troubleshooting potential problems:

- Licensing
- Usage Stats
- Troubleshooting
- Raw query

### Viewing and changing your software license status

The **Licensing** tab displays details of your existing software license. If you have a new license you can also activate it from this tab.

#### To view your software license status:

- On the **Administration** menu, point to **PFE System Information**, and then click **Licensing**.

The **Licensing** tab displays warnings if you are approaching or exceeding various limits, as follows:

- If your current device count is equal to 100% of your device limit, PrintFleet displays a critical error. If you reach this point you will not be able to add any more new devices until you purchase additional device licenses.
- If your current device count is greater than or equal to 90% of your device limit, PrintFleet displays a warning. You should strongly consider purchasing additional device licenses, otherwise you risk exceeding your device limit and being unable to add new devices.
- If the number of hidden devices is greater than or equal to 50% of the number of licensed devices, PrintFleet displays a warning. This indicates that you are not making efficient use of your device licenses.
- If the number of unmanaged devices is greater than or equal to 50% of the number of licensed devices, PrintFleet displays a warning. This indicates that you are not making efficient use of your device licenses.
- If you are within 30 days of the expiration date of your PrintFleet Optimizer license, PrintFleet displays a warning.

#### To update your software license status:

1. On the **Administration** menu, point to **PFE System Information**, and then click **Licensing**.
2. Under **License Activation Options**, click **I have a new license string**.
3. Paste the license string into the box that appears.
4. Click **Activate**.

#### Viewing license, usage, and group statistics

In the **Usage Stats** tab, you can view your software license information, usage information, and group counts statistics.

Check the **Usage Stats** tab to know when you need to purchase additional device licenses.

#### To view your license, usage, and group statistics:

- On the **Administration** menu, point to **PFE System Information**, and then click **Usage Stats**.

#### Viewing product, server, and path information

The **Troubleshooting** tab includes product, server, and path information for your PrintFleet system.

#### To view product, server, and path information:

- On the **Administration** menu, point to **PFE System Information**, and then click **Troubleshooting**.

#### Querying the database

You can directly query the database using SQL statements from the PrintFleet Optimizer interface. This is useful in troubleshooting situations where the information you need is not provided elsewhere.

#### To query the database:

1. On the **Administration** menu, point to **PFE System Information**, and then click **Raw Query**.
2. In the **SQL** box, type your SQL query statement.
3. Click **Run**. The output will be displayed below.

## 6.7 Monitoring Outbound Email

PrintFleet Optimizer sends email in a variety of circumstances, including:

- Sending a request for a supply
- Sending a scheduled report
- Sending the result of a scheduled meter export
- Sending a notification that an alert event has started or stopped
- Sending a DCA activation PIN
- Resetting a user's forgotten password

If you want, you can view a log of these emails.

<b>Note</b>	To access the <b>Outbound Email</b> page you must be a user who has been assigned the <b>Admin</b> role in the <b>Root Group</b> .
-------------	--

#### To view a log of outbound emails:

- On the **Administration** menu, click **Outbound Email**. The **Outbound Email** page appears.

Outbound Email			
			
To	Subject	Queued	Status
jsmith@printfleet.com	[PFE DCA Activation]	a few seconds ago	Pending
jsmith@printfleet.com	[PFE Password Reset]	7 minutes ago	Sent
jsmith@printfleet.com	[PFE Alert Notification] Every 30 days - TASKalfa 250ci	7 minutes ago	Sent
jsmith@printfleet.com	[PFE Scheduled Report] Daily	27 minutes ago	Sent
jsmith@printfleet.com	[PFE Current Meters Export] Current Meters - Daily Export	32 minutes ago	Sent
jsmith@printfleet.com	[PFE Supply Request] Supply Request	2 hours ago	Sent

For each email, the **Outbound Email** page displays:

- The address(es) to which the email was sent
- The subject line of the email
- When the email was added to the queue
- The status of the email (**Pending**, **Sent**, or **Failed**)

If you want to see the exact time and date an email was queued or sent, hover your mouse cursor over the corresponding entry in the **Queued** or **Sent** column and read the information from the tooltip that appears.

#### To view the content of an outbound email:

- On the **Outbound Email** page, click the subject of the email you want to view. The **View Email** page opens.

<b>Note</b>	The <b>View Email</b> page displays all contents of an outbound email except for attachments. Attachments are only included in the email itself.
-------------	--

## 6.8 Configuring system wide settings

There are a variety of system wide settings that can be configured from the **Configuration** page. They are broken down into the following categories:

- General settings
- Security settings
- Device settings
- Database settings
- Data retention

### Configuring general settings

The items in the following table are included in general settings.

#### To configure general system wide settings:

1. On the **Administration** menu, click **Configuration**.
2. In the **General Settings** area, enter configuration settings as desired.
3. Click **Save**.

**Table 14: General system wide settings**

Item	Description
Default Starting Page	The default page users will see immediately after they log in to the system. Can be overridden for specific users in their user settings.
Timeout Page	The page users will see after they log out of the system, or when their session times out.
Product Name	The product name that will display on the browser title bar.
Error Page Footer	The message displayed when an error message occurs.
Email From Address	The sender email address used when emails are sent from the system.
Email From Name	The sender name used when emails are sent from the system.

**Table 14: General system wide settings**

Item	Description
Server URL	Specify the URL of your PrintFleet server. If this field is not filled in, the hyperlink that normally provides quick access from alert emails to the <b>Device Detail</b> page will not be available, and you may not be able to generate keys for Printer DCA version 3.
Error Reporting	Enable this setting if you want to share anonymous usage data and error reports with PrintFleet.

## Configuring security settings

The items in the following table are the system wide security settings that can be configured.

### To configure system wide security settings:

1. On the **Administration** menu, click **Configuration**.
2. In the **Security Settings** area, enter configuration settings as desired.
3. Click **Save**.

**Table 15: Security settings**

Item	Description
Enforce Email As User Name	Forces user to have an email address as their user name.
Password Strength	The minimum required password strength, ranging from 0 to 100. A higher number requires a longer or more complex password (numbers, special characters, etc.)
SSL (HTTPS)	If set to <b>Required on all pages</b> , will force the use of SSL on all pages. If set to <b>Required on sensitive pages only</b> , will force the use of SSL on the login, user edit, and change password pages. If set to <b>Not required</b> , will not force the use of SSL on any page.

## Configuring device settings

The items in the following table are the system wide device settings that can be configured.

### To configure system wide device settings:

1. On the **Administration** menu, click **Configuration**.
2. In the **Device Settings** area, enter configuration settings as desired.
3. Click **Save**.

**Table 16: Device settings**

Item	Description
Days before device stale	The number of days since the last active date for devices to be considered stale.
Default last active days filter	The number of days since the last active date that device views will filter by default (devices past this number will not display unless filter is manually changed).
Device New Days	The number of days that a newly discovered device will display the new icon beside the device name.
Min Est. Coverage %	The minimum value that an estimated coverage value is considered valid. If the estimated value falls below this setting, the default coverage value is used.
Max Est. Coverage %	The maximum value that an estimated coverage value is considered valid. If the estimated value rises above this setting, the default coverage value is used.
Default Black Coverage %	The default coverage for black toner if no coverage can be calculated.
Default Color Coverage %	The default coverage for color toner if no coverage can be calculated.

## Configuring database settings

There is one database setting that can be configured: **Command Timeout**. You can set the maximum number of seconds that any database query or command can take before it times out.

### To configure database settings:

1. On the **Administration** menu, click **Configuration**.
2. In the **Database Settings** area, enter the maximum number of seconds for a database query or command in the **Command Timeout** box.
3. Click **Save**.

## Configuring data retention

You can configure how long to retain the data from a variety of areas in PrintFleet Optimizer. For each of the different data sources you can specify:

- the number of days to keep the data
- the schedule for running the procedure that actually removes the old data

When the scheduled time arrives for a given procedure to run, it checks the relevant data source and deletes any data older than the specified number of days. Using schedules allows you to have the procedures run during periods when of low server usage.

### Note

For Deleted Devices data you can only specify the time of day at which the procedure runs.

### To configure data retention settings:

1. On the **Administration** menu, click **Configuration**.
2. In the **Data Retention** area, enter configuration settings as desired.
3. Click **Save**.

**Table 17: Data retention settings**

Item	Description
Attribute Value Days	The number of days to keep attribute value data.
Attribute Value Schedule	The schedule to run the attribute value retention procedure. NOTE: This date is stored as UTC.
Supply Value Days	The number of days to keep supply value data.

**Table 17: Data retention settings**

Item	Description
Supply Value Schedule	The schedule to run the supply value retention procedure. NOTE: This date is stored as UTC..
Meter Value Days	The number of days to keep meter value data.
Meter Value Schedule	The schedule to run the meter value retention procedure. NOTE: This date is stored as UTC.
Code Value Days	The number of days to keep code value data.
Code Value Schedule	The schedule to run the code value retention procedure. NOTE: This date is stored as UTC.
Attribute Processed Days	The number of days to keep processed attribute raw value data.
Attribute Processed Schedule	The schedule to run the processed attribute raw value retention procedure. NOTE: This date is stored as UTC.
Supply Processed Days	The number of days to keep processed supply raw value data.
Supply Processed Schedule	The schedule to run the processed supply raw value retention procedure. NOTE: This date is stored as UTC..
Meter Processed Days	The number of days to keep processed meter raw value data.
Meter Processed Schedule	The schedule to run the processed meter raw value retention procedure. NOTE: This date is stored as UTC.
Code Processed Days	The number of days to keep processed code raw value data.



**Table 17: Data retention settings**

Item	Description
Code Processed Schedule	The schedule to run the processed code raw value retention procedure. NOTE: This date is stored as UTC.
Activation Log Days	The number of days to keep activation log data.
Activation Log Schedule	The schedule to run the activation log retention procedure. NOTE: This date is stored as UTC.
DCA Log Days	The number of days to keep Printer DCA log data.
DCA Log Schedule	The schedule to run the Printer DCA log retention procedure. NOTE: This date is stored as UTC.
DCA Semaphore Days	The number of days to keep Printer DCA semaphore command status log data.
DCA Semaphore Schedule	The schedule to run the Printer DCA semaphore command status retention procedure. NOTE: This date is stored as UTC.
Export Schedule Log Days	The number of days to keep export schedule log data.
Export Schedule Log Schedule	The schedule to run the export schedule log retention procedure. NOTE: This date is stored as UTC.
Message Container Log Days	The number of days to keep message container data.
Message Container Log Schedule	The schedule to run the message container retention procedure. NOTE: This date is stored as UTC.
User Login Log Days	The number of days to keep user login log data.

**Table 17: Data retention settings**

Item	Description
User Login Log Schedule	The schedule to run the user login log retention procedure. NOTE: This date is stored as UTC.
Submission Days	The number of days to keep submission data.
Submission Schedule	The schedule to run the submission retention procedure. NOTE: This date is stored as UTC.
Deleted Devices Schedule	The schedule to remove deleted device history (must be run daily). NOTE: This date is stored as UTC.
Delete Inactive Devices Days	The number of days since the last active date for devices before the devices are deleted.
Delete Inactive Devices Schedule	The schedule to run the delete inactive devices retention procedure. NOTE: This date is stored as UTC.

## 6.9 Understanding PrintFleet Security

In PrintFleet Optimizer, the functionality available to a given user is determined by what permissions that user has. The permissions are determined by the groups and roles to which that user belongs.

### Basic Group/ Role Assignment

Suppose a user named Henry is assigned to a group called HQ, and within the HQ group Henry is assigned the Default role. Assuming the Default role has not been modified, it has the following permissions:

- **Device View**
- **Report View**

As you might expect, this means that Henry can view the devices assigned to the HQ group, and the report definitions that have been shared with the HQ group. The **Report View** permission also allows users to run and schedule report definitions, so Henry would also be

able to perform those functions with report definitions shared with the HQ group. Henry would also be able to run and schedule report definitions shared with the HQ group.

Although Henry was specifically assigned to the HQ group, he may also be able to access devices and reports in other groups depending on where those groups sit in the group hierarchy relative to the HQ group to which he was assigned.

## Group Inheritance

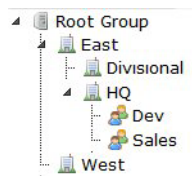
When PrintFleet Optimizer is first installed it has just one group. This first group is typically called the root group. You will usually go on to add other groups to reflect the structure of your organization. The first group you add is always added below the root group. This reflects two important points:

- There can only ever be one root group.
- The root group is always above all other groups.

The concept of one group being considered above or below another group is a critical one to understand because it is used to determine what permissions users have in the various levels of the group hierarchy. The 'higher' a group, the more powerful it is considered to be; users in a higher group automatically inherit permissions in lower groups. Specifically:

- The roles (and by extension the permissions) that a user has in a given group will also apply to any groups below that group.

For example, suppose you have set up your groups like this:



If Henry is assigned to the HQ group as a user having the Default role, he will also be considered to have the Default role in the groups below the HQ group: Dev and Sales. If a device was assigned to the Dev group, Henry—by virtue of the **Device View** permission he has through the Default role—would be able to see that device. Similarly, a user who is assigned to the Root Group would be able to see the devices in that group as well as in any groups below that group (effectively all groups in the system).

The inheritance of permissions from group to group only applies in a downward direction. Henry would not be able to see devices from groups above the HQ group (such as East), or even from groups at the same level as the HQ group (such as Divisional). For more information, see "Managing groups" on page 92.

## Role Inheritance

PrintFleet provides four standard roles: **Default**, **Customer**, **Dealer**, and **Admin**. Although they are initially set up to have

progressively more permissions (the **Admin** role always has all permissions), you can customize the permissions assigned to any of the non-Admin roles in any way you like, or even create new custom roles. For more information, see “Managing roles” on page 124.

Some of the functionality in PrintFleet Optimizer is restricted based on the role itself rather than on the specific permissions associated with that role. For example, when a user creates a report definition and wants to share it with other users, in addition to specifying what group they want to share the report definition with they can also specify what role(s) they want to share it with; if a user in the specified group does not also have the specified role, they will not be able to access the shared report definition, even if they have every possible permission. It is important, therefore, to understand a few simple rules about the way the different roles relate to one another.

**Default Role.** When you create a new user in PrintFleet Optimizer, you specify what group to assign them to, and then you choose what role to assign them to within the specified group. Every user automatically has the **Default** role selected (it is not possible to remove the selection). Regardless of what other roles might be selected for a new user (such as **Dealer**), she will also have the **Default** role.

**Admin Role.** Users who are responsible for managing the system typically need all permissions and all roles to ensure they have complete access to everything. As such, when you assign a new user to the **Admin** role, they automatically get all of the other roles (even custom roles) within their group (and all groups below their group). Specifically, a user that has the **Admin** role automatically has the **Dealer**, **Customer** and **Default** roles as well.

**Other Roles.** Aside from the relationships already mentioned, there are no other relationships among the roles. In particular, note that a user who has been assigned the **Dealer** role does not automatically have the **Customer** role. If you want a user to have both of these roles, but not have the **Admin** role, you will have to specifically select the check box for each role when setting up the user.

## Extra Privileges for Admin Role

There are some abilities associated with the **Admin** role that are not tied to a specific permission:

- Users who have the **Admin** role are able to view and manage all report definitions created by users in their group, even when access to the report definition has been set to **Private** by the author of the report definition.
- Users who have the **Admin** role in the Root group are able to set the access for PrintFleet-created sample reports.

## Reports Security

There are two permissions related to reports:

- **Report View**—Allows users to run and schedule report definitions that have been shared with them.
- **Report Management**—Allows users to create report definitions, as well as edit, copy, and delete report definitions that have been shared with them.

Note the reference to sharing in each of the previous descriptions. With a report definition there is an additional access setting to consider. When a user with the **Report Management** permission creates a report definition, they have the option of either keeping the report definition private or sharing it with a group (or, if they want, with a specific role within the group).

Report schedules also have an inherent security associated with them. Specifically, a user can see the report schedules of another user if they have been assigned to all of the same group/role combinations as that other user. For more information, see “Report Security” on page 68.

## Alerts Security

There is one permission related to Alerts:

- **Alert Management**—Allows users to create alert definitions, as well as edit and delete alert definitions created by other users.

When a user creates an alert definition they can set restrictions on which group’s users can edit the definition, and which users can see the alert events associated with the definition. For more information, see “Alerts Security” on page 72.

## 6.10 Understanding the system architecture

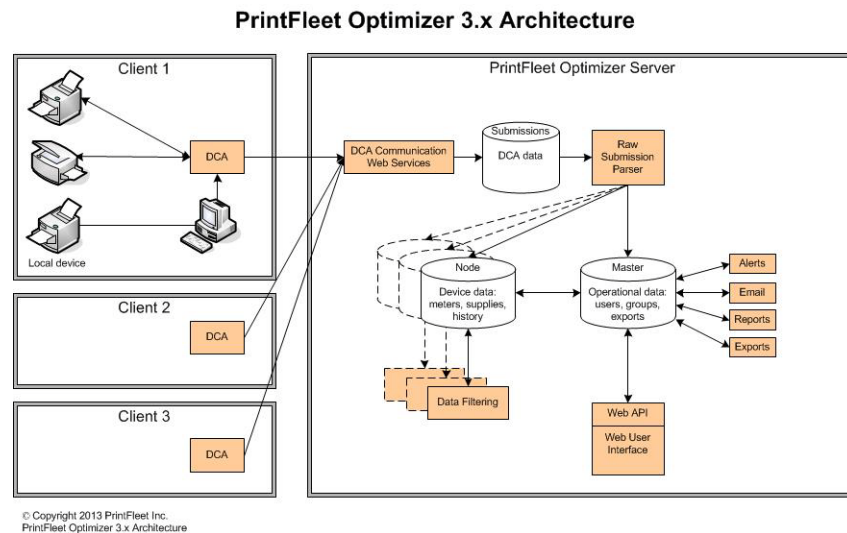
To administrate and fully take advantage of all that the PrintFleet Optimizer system has to offer, you need to understand the underlying architecture.

The PrintFleet server is the engine of the system, and relies on the following components:

- Printer DCAs installed at customer locations send data on a scheduled basis to the PrintFleet server.
- The Submissions database on the server holds the raw inbound data.
- The Raw Submission Parser service takes the raw submission information from the Submissions database and matches it to devices.
- The Node database stores all device data (such as meter values, supply information, and history). There will always be at least

one Node database, but there may be more depending on the size of your system.

- The Master database stores the operational data (such as users, groups, and exports).
- The Scheduler service sends out alerts, emails, reports and exports. It also runs any recurring back-end jobs the system has.



## Canon Remote Maintenance System

If you are a Canon dealer using the Canon Remote Maintenance system, be aware that PrintFleet will ignore error data received from the Printer DCA for any Canon devices being monitored by the Canon Remote Maintenance system. For these devices error information will be provided by the UGW instead.

## 6.11 Troubleshooting stale data issues

Devices will appear as stale in PrintFleet Optimizer if the Printer DCA has not been able to collect data from the device for a period of 24 hours.

If customers are showing stale devices without an obvious explanation, the customer should be contacted to determine the reason. A device may appear as stale for many reasons, including:

- The device has been removed from the network
- The device is turned off
- The transmission port on the network is closed (all devices display as stale)
- The computer installed with the Printer DCA is turned off (all devices display as stale)

## 6.12 Troubleshooting database errors

As a PrintFleet administrator, you should review database errors on a periodic basis by analyzing the Event Viewer and SQL server logs. By viewing these items, you will know if there are any errors that need to be handled.

## 6.13 Compressing, backing up, and restoring the database

If you are using PrintFleet hosting services, your database will be backed up regularly by PrintFleet.

If you are independently hosting your system, you should compress and back up the PrintFleet database, ideally on a daily basis. Once backups are created, the database can be restored to any previous backup file at any time. For information on compressing, backing up, and restoring the database, please consult your Microsoft SQL Server documentation.

## 6.14 Logging

Logging is available for the following PrintFleet Optimizer applications:

- PrintFleet Optimizer (PFO)
- Scheduler
- Parsing

If necessary you can also specify logging for individual name spaces within an application.

### Configuration

You configure the way logging is done by editing XML files. There is one global configuration file, as well as several application-specific configuration files. Your configuration settings are the combination of the settings from each of these files.

**Using the Global Configuration File.** You can use the global configuration file to make changes to the logging for any individual application, or for all applications together. You can find the global.log.config XML file in the following location:

- `<CommonApplicationData>\Config\global.log.config`  
(e.g. C:\ProgramData\PrintFleet Enterprise\Config\global.log.config)

The PrintFleet Optimizer installer automatically creates the global.log.config file, and adds a default rule of `<logger name="*" minlevel="Info" writeTo="file"/>`.

**Applying Application-Specific Logging Settings.** If you want, you can use an application-specific log.config XML file to change the logging settings for individual PrintFleet Optimizer applications, you can do so by creating and maintaining the appropriate XML file:

- `<CommonApplicationData>\Config\<configuration file name>`  
(e.g. C:\ProgramData\PrintFleet Enterprise\Config\PrintFleet.PFE.Scheduling.Service.log.config)

**Table 18: Individual Application Configuration File Names**

Application	Configuration File Name
PrintFleet Optimizer	w3wp.log.config
Scheduler	PrintFleet.PFE.Scheduling.Service.log.config
Parsing	PrintFleet.PFE.RawSubmission.Service.log.config

A configuration file might look like this:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<nlog xmlns="http://www.nlog-project.org/schemas/NLog.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <rules>

    <logger name="*" minlevel="Debug" writeTo="file"/>

    <logger name="*" minlevel="Debug" writeTo="console"/>

  </rules>

</nlog>
```

## Rules

Within the XML file you specify how logging behaves by creating or editing rules. Each `<logger />` rule accepts the following attributes:

- **name**—Source/logger name (may include wildcard characters \*)
- **minlevel**—Minimal log level for this rule to match
- **maxlevel**—Maximum log level for this rule to match
- **level**—Single log level for this rule to match
- **levels**—Comma separated list of log levels for this rule to match
- **writeTo**—Comma separated list of targets that should be written to when this rule matches.
- **final**—Make this rule final. No further rules are processed when any final rule matches.



Rules are processed starting with the first rule in the list. When a rule matches, log messages are directed to the target(s) in that rule. If a rule is marked as final, rules below it are not processed.

Note that rules are additive, both within and among the configuration files. In other words, if you had two (or more) rules that specified that you wanted an Info logging level on PrintFleet Optimizer, you would get two (or more) identical Info messages for each PrintFleet Optimizer event.

## Logger Names

When entering a logger name in a rule, you can either use a wildcard character or you can provide a specific name.

**Using a wildcard.** You can use the asterisk character '\*' as a wildcard for a logger name. If used in a rule in an application-specific configuration file, the rule will apply to the application and all loggers within the application. If used in a rule in the global configuration file, the rule will apply to all applications and all loggers.

**Using a specific logger name.** If you know the name of a specific logger that you want to monitor, you can enter that name. Unfortunately, the list of potential logger names is too large to include here. If you start by using the wildcard character, you can find the names of individual loggers by examining the output of the log files.

## Logging Levels

The logging levels determine how much information is logged. When setting the logging levels, keep in mind that there is a trade off between information and performance—setting the logging level to the most verbose setting (Debug), or specifying multiple logging levels, will provide more information, but will also have a greater impact on performance.

You can set logging to any of the following levels (listed in order of decreasing severity): Fatal, Error, Warn, Info, and Debug. A brief description of each level is provided below:

- **Fatal**—Logs fatal errors when the application can no longer continue at all. Typically this means the application is exiting, or the ASP.NET Request is ending.
- **Error**—Logs recoverable (non-Fatal) errors that should normally be visible to an admin. Typically entries classified as Error are actionable in some way.
- **Warn**—Logs potential problems and non-actionable errors that don't strictly need an admin to action them. For example, a problem parsing data passed to a web service is probably a Warning because there is not much an admin can do, but it is a higher severity than just Info.
- **Info**—Logs basic informational (but not overly-detailed) messages about actions in the system. For example, when

processing items in a file, there may be a single Info message that says the file is being processed, but nothing more.

- **Debug**—Logs Debug messages which are more verbose than Info, and will typically expand on information provided in an Info message. For example, when processing items in a file, there may be a single Info message that says the file is being processed, a Debug message that lists the file timestamp and permissions, a Debug message for every item in the file, and a Debug message when the file has been closed.

## Targets

The target determines the output media for the logging messages. There are several targets available to choose from:

- **eventlog**—Puts messages into the Windows Application Event Log, using the source name "PrintFleet Enterprise" (this source is initialized by the PFE installer).
- **file**—Puts messages into the specified application's log file. The log file is stored in CommonApplicationData folder\PrintFleet Enterprise\Logs\applicationname.shortdate.log (e.g. C:\ProgramData\PrintFleet Enterprise\logs\PrintFleet.PFE.Scheduling.Service.2011-01-01.log)
- **console**—Puts colored messages onto the console output of the application.
- **debugger**—Provides output to an attached debugger.

## Examples

1. All messages whose level is Info or higher are written to the "file" target:

```
<logger name="*" minlevel="Info" writeTo="file" />
```

2. All messages from the Class1 in the Name.Space whose level is either Debug or Error are written to the "file" target.

```
<logger name="Name.Space.Class1" levels="Debug,Error"
writeTo="file" />
```

3. Messages from any class in the Name.Space namespace are written to both "file" and "console" targets regardless of their levels.

```
<logger name="Name.Space.*" writeTo="file,console" />
```

4. Messages from any class in the Name.Space namespace whose level is between Debug and Error (which makes it Debug, Info, Warn, Error) are rejected (as there's no writeTo clause) and no further rules are processed for them (because of the final="true" setting).

```
<logger name="Name.Space.*" minlevel="Debug"
maxlevel="Error" final="true" />
```

## Understanding Log File Output

When you specify file as a target, each of the indicated applications writes its own log file. The log files are written to application-specific folders, and are dated (year-month-day) as follows:

```
Logs\<applicationname>\<applicationname>.<year>-<month>-<day>.log
```

A typical example might be:

```
Logs\ PrintFleet.PFE.RawSubmission.Service
\PrintFleet.PFE.RawSubmission.Service.2013-11-29.log
```

Within a log file, an entry takes the form:

```
Date time loglevel [Namespace, ProcessID, ThreadID] message
```

A typical example might be:

```
2013-11-29 21:35:21.5600 WARN [RawSubmissionParser
, 1592,15 ] Loading 500 new submissions.
```

## 6.15 Providing technical support

The following best practices are recommended for providing technical support to your PrintFleet customers:

### Note

All issues should be tracked with a custom or commercially available CRM (Customer Relationship Management) software solution.

- Track all incoming calls and emails. Specifically, record the caller's name, phone number, company, the reason for the call, whether or not there was a resolution to their situation, and what the resolution was or what the next step is.
- Use email as a support tool, since it automatically records all of the details in writing.
- Ensure that callers phoning support, as much as possible, do not have to wait longer than five rings to get a technical person on the line.
- Try to deliver resolutions to routine problems within 30 minutes of the support call. There should be a plan in place that specifies levels of problems and their expected response times.
- Make self help materials available to your customers to minimize the need for telephone and email support.
- Review support call records on a weekly basis to flag any recurring issues that might be preventable by changing the installation or initial training process.
- Monitor new customers and installations closely for the first two weeks while they are getting started with the software.
- Consider providing 24-hour support using mobile devices.

## 6.16 Distributing software updates

It is the responsibility of the PrintFleet administrator to distribute software updates to their clients as they see fit. Updates at the client location would primarily be for the Printer DCA. Updates for the Printer DCA can be distributed to remote installations from your central server.

## 6.17 Integrating PrintFleet Optimizer logins with an existing system using one time passwords

One-time password (OTP) functionality is designed to allow you to implement single sign-on, where a user signs onto a separate software system and at the same time is signed onto PrintFleet Optimizer.

An OTP can be requested for a user account, by a user who is a Root Administrator. By default, OTPs have a lifetime of one minute. Once the OTP is used to login, it is deleted, so OTPs cannot be reused. OTPs can be up to 50 characters in length, and although the current implementation uses 32-character hex strings, any process designed should allow up to 50 characters to remain consistent with the internal design.

### Requesting a one time password

There are four ways to create a new OTP:

- Using the getUserOTP SQL stored procedure
- Using the userOTP table directly
- Using the simple web service
- Using the SOAP web service

### To request an OTP using the getUserOTP SQL stored procedure

This procedure can be called with either a userid, or a user login, for example:

```
-- get an OTP using a userid
EXEC getUserOTP 'b7fadd07-3c82-43be-b0ed-e16216ee9955'

-- alternative syntax for getUserOTP with userid:
EXEC getUserOTP @userid='b7fadd07-3c82-43be-b0ed-e16216ee9955'

-- get an OTP using a login
EXEC getUserOTP @login='demo@printfleet.com'
```

It returns a result set with the same structure as the userOTP table, which contains the columns `userId`, `oneTimePassword`, and `expiry`, as demonstrated in the following table.

**Table 19: OTP Result**

<code>userId</code>	<code>oneTimePassword</code>	<code>expiry</code>
B7FADD07-3C82-43BE-B0ED-E16216EE9955	16a9ef59ad5e47a1b92465493433a617	2010-07-30 10:38:25.033

### To request an OTP using the userOTP table directly

You can manually insert a record into the userOTP table, which, at minimum, requires the `userId` field. The `oneTimePassword` and `expiry` fields can be manually set, but are otherwise automatically populated.

### To request an OTP using the simple web service

There is a basic web page that will return an OTP. This page will not work unless it is accessed over SSL; this is a security precaution that prevents login credentials from being transmitted in plain text.

There are two ways to call this service:

- `/pfservices/Users.ashx?action=onetimepassword&authuser=authuser&authpass=authpass&login=login`
- `/pfservices/Users.ashx?action=onetimepassword&authuser=authuser&authpass=authpass&userid=userid`

The following is an explanation of the parameters used:

- **authuser** is the `userid` of a Root Administrator on the system. It is recommended you create an account explicitly for this purpose, and set `Disabled` to `true`. This will prevent the user from logging into the web interface, but not from using services.
- **authpass** is the password of the `authuser` user account.
- **login** is the login name of the user you want to generate the OTP for.
- **userid** is the `userid` (GUID) of the user you want to generate the OTP for.

<b>Note</b>	Only one of <b>login</b> or <b>userid</b> needs to be specified to call the service.
-------------	--

Either a POST or a GET can be used with this method. If using a GET, be sure to send all parameters using URL encoding. For example, an email address `demo@example.com` would be encoded as `demo%40example.com`.

The web service will either return the password as the only response, with a 200 OK HTTP response code, or it will return a 500 error HTTP response code, with the text `ERROR: message`.

### To request an OTP using the SOAP web interface

There is a standard SOAP (1.1 or 1.2) web service for requesting oneTimePasswords, located at `/pfservices/Users.asmx`.

See `/pfservices/Users.asmx?WSDL` for the WSDL specifications.

This page will not work unless it is accessed over SSL; this is a security precaution that prevents login credentials from being transmitted in plain text. An error will be issued if the service is accessed by a method other than HTTPS.

There are two methods to request an OTP using the SOAP web interface:

- `GetOneTimePasswordByLogin`
- `GetOneTimePasswordByUserId`

#### SOAP 1.1 Example Request (`GetOneTimePasswordByLogin`):

```
POST /pfservices/Users.asmx HTTP/1.1
Host: localhost
Content-Type: text/xml; charset=utf-8
Content-Length: length
SOAPAction: "http://tempuri.org/GetOneTimePasswordByLogin"
```

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/
XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/
envelope/">
  <soap:Body>
    <GetOneTimePasswordByLogin xmlns="http://tempuri.org/">
      <authinfo>
        <UserId>string</UserId>
        <Password>string</Password>
      </authinfo>
      <login>string</login>
    </GetOneTimePasswordByLogin>
  </soap:Body>
</soap:Envelope>
```

#### SOAP 1.1 Example Response (`GetOneTimePasswordByLogin`):

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: length
```

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/
XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/
envelope/">
  <soap:Body>
    <GetOneTimePasswordByLoginResponse xmlns="http://
tempuri.org/">
      <GetOneTimePasswordByLoginResult>string</
GetOneTimePasswordByLoginResult>
    </GetOneTimePasswordByLoginResponse>
  </soap:Body>
</soap:Envelope>
```

### **SOAP 1.1 Example Request (GetOneTimePasswordByUserId):**

POST /pfservices/Users.asmx HTTP/1.1  
Host: localhost  
Content-Type: text/xml; charset=utf-8  
Content-Length: length  
SOAPAction: "http://tempuri.org/GetOneTimePasswordByUserId"

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/
XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/
envelope/">
  <soap:Body>
    <GetOneTimePasswordByUserId xmlns="http://tempuri.org/">
      <authinfo>
        <UserId>string</UserId>
        <Password>string</Password>
      </authinfo>
      <userId>string</userId>
    </GetOneTimePasswordByUserId>
  </soap:Body>
</soap:Envelope>
```

### **SOAP 1.1 Example Response (GetOneTimePasswordByUserId):**

HTTP/1.1 200 OK  
Content-Type: text/xml; charset=utf-8  
Content-Length: length

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/
XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/
envelope/">
  <soap:Body>
    <GetOneTimePasswordByUserIdResponse xmlns="http://
tempuri.org/">
      <GetOneTimePasswordByUserIdResult>string</
```

```
GetOneTimePasswordByUserIdResult>
  </GetOneTimePasswordByUserIdResponse>
</soap:Body>
</soap:Envelope>
```

## Using a one time password

To log a user in with an OTP, append the GET variables `?otp=password` to the URL of any page in PrintFleet Optimizer, and redirect the user to that page. The user will be logged in directly to the page in question. If `login.aspx` is used, they will go to their normal start page, for example:

```
/login.aspx?otp=16a9ef59ad5e47a1b92465493433a617
```

You can also use a POST to send this variable.

Since the passwords expire quickly (default one minute), it is recommended that you request and redirect the user in one operation. If you have a link on a site for the purpose of logging users into PrintFleet Optimizer, it is recommended that you have this link invoke the code on the site that requests the OTP, and then use a Location redirect header to send the user to PrintFleet Optimizer.



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